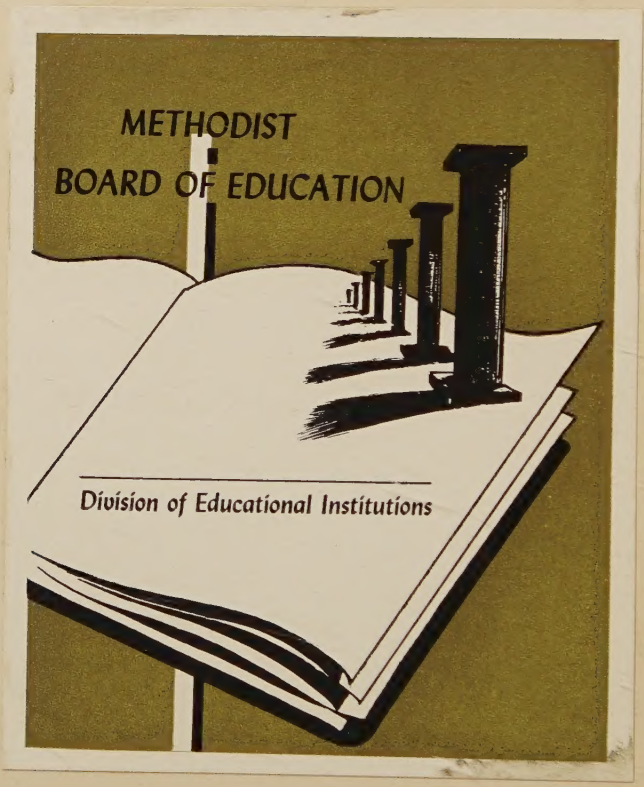
GREAT AMERICAN UNIVERSITIES

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GREAT AMERICAN UNIVERSITIES



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GREAT AMERICAN UNIVERSITIES

BY

EDWIN E. SLOSSON

M.S. (KANSAS); PH.D. (CHICAGO)

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THIS BOOK

WHICH OWES ITS EXISTENCE TO THE INITIATIVE

AND ENCOURAGEMENT OF

HAMILTON HOLT

MANAGING EDITOR OF *THE INDEPENDENT*

IS GRATEFULLY DEDICATED TO HIM

BY THE AUTHOR

PREFACE

The unprecedented growth of American universities in recent years and their efforts to conform or to resist conformity with the demands of the times have effected such a transformation it is difficult to get a clear idea of their present condition and relative standing. A list of the larger universities arranged in the order of their size, wealth, scholarly productivity, or other objective criterion has surprises for almost every reader. He finds in the list and near the head of it names of institutions about which he knows little, and probably some of those whose names are most familiar to him are really very different from his conception of them, derived from their history or from early acquaintance. The alumnus who returns for the decennial reunion finds his Alma Mater greatly changed. Usually he is inclined to think that the change has not been altogether for the better in spite of the new buildings and crowds of students. He can, in fact, name the date when his Alma Mater began to decline and to lose the real old college spirit. It was ten years ago, when was graduated what is universally conceded by all its members to be the brightest class that ever came forth from its walls.

The present work is the result of an effort to find out for myself what our leading universities are now doing. I was aware of the fact that university catalogues and annual reports alone do not always give an adequate and satisfactory picture of actual conditions, for I once had a share in writing them. So in order to make the acquaintance of the fourteen universities selected and to catch something of that most important and most intangible thing

called "the college spirit," I spent a week in residence at each of them, living in some club or boarding house, attending classes and talking with as many of the faculty and students as I could. Such an acquaintance is of course superficial, and this volume would have been more authoritative if each chapter had been written by the president or the president's secretary, but I trust that there is some compensating advantage in the comparative point of view; that I have been able by passing in such quick succession from one university to another, with my mind sensitized by the previous exposure, to discover some similarities and contrasts unrealized by those who have not had the benefit of such an experience.

As these chapters appeared month by month in *The Independent* from January, 1909, to March, 1910, they have had the benefit of a very searching criticism from the college press and numerous correspondents, so I venture to hope they are reasonably free from errors of misstatement. From errors of misjudgment and mistaken emphasis it cannot be expected that they should be free. I discovered early in my tour that very few things could be said about a university which would not be contradicted by some one else upon the same campus. What one person would claim as a virtue of the institution another would disavow as a defect. Consequently most of these pages would have been blank, except where filled with bare description, if I had not assumed the responsibility for the frank expression of opinions based upon the best evidence I could obtain. The value of impressions and criticism is inevitably somewhat dependent upon the standpoint of the observer, so in order that the reader may make due allowance for the personal equation, I have not attempted to conceal my own views upon the questions considered.

The choice of the universities to be visited was an embarrassing one, for the number must be limited and any

method of selection would be open to objection. It was intended to confine the study to the large universities, not because small colleges were thought unimportant, for there are many signs indicating that they will have a more definite field of usefulness in the future than in the recent past, but because the larger institutions present more novel features and unsettled problems. After much consideration it was decided to include nine endowed universities: Harvard, Columbia, Chicago, Yale, Cornell, Princeton, Pennsylvania, Stanford, and Johns Hopkins, and five State universities, those of Michigan, Minnesota, Wisconsin, California, and Illinois.

These fourteen stand at the head of the list prepared by the Carnegie Foundation for the Advancement of Teaching, which has ranked the universities of the country according to money annually spent by them for instruction, probably a fairer criterion than any other objective standard. Above the $250,000 mark on this list are all of the universities here considered except Johns Hopkins, but it would be impossible to discuss American universities without including Johns Hopkins, which, though now inadequately financed, has always laid the greatest emphasis upon the distinguishing feature of a university,—that is, graduate work. The table below taken from Bulletin No. 2 of the Carnegie Foundation, published June, 1908, gives the relative standing of these universities at the time this study was begun.

I have added the last three columns, which give the ratio obtained by dividing the amount spent for instruction by the number of students and the same after subtracting the minimum tuition. More recent statistics will be found in the descriptions of the several universities and in the concluding chapter, where the tables of attendance have in most cases been brought up to the beginning of 1910 through the kindness of the registrars. The words "now," "this year,"

and the like refer usually to the collegiate year 1908–1909, but I have not hesitated to avail myself of later data wherever obtainable, even though they were inconsistent with those given earlier, which being used for comparison could not be altered. I have indicated where necessary the date and source of the statistics used. But the reader must be warned that university statistics are in hopeless confusion. The methods of reporting and the standards of classification in different universities are so diverse that conclusions drawn from their comparison are apt to be misleading.

Institutions	Total Annual Income	Annual Appropriation for Salaries of Instructing Staff	Total Number of Students in University	Total Instructing Staff in University	Ratio	Average Expenditure for Instruction per Student	Minimum Tuition	Expenditure for Instruction per Student in Excess of Tuition
Columbia Univ. . .	$1,675,000	$1,145,000	4087	559	7.3	$280	$150	$130
Harvard Univ. . .	1,827,789	841,970	4012	573	7	209	150	59
Univ. of Chicago .	1,304,000	699,000	5070	291	17.4	137	120	17
Univ. of Michigan .	1,078,000	536,000	4282	285	15	125	30	95
Yale Univ. . . .	1,088,921	524,577	3306	365	9	158	155	3
Cornell Univ. . .	1,082,513	510,931	3635	507	7.1	140	100	40
Univ. of Illinois . .	1,200,000	491,675	3605	414	8.7	136	24	112
Univ. of Wisconsin .	998,634	489,810	3116	297	10.4	157	—	157
Univ. of Penna. . .	589,226	433,311	3700	375	9.8	117	150	−33
Univ. of California .	844,000	408,000	2987	350	8.5	136	—	136
Stanford Univ. . .	850,000	365,000	1583	136	11.6	230	20	210
Princeton Univ. . .	442,232	308,650	1311	163	8	235	150	85
Univ. of Minnesota .	515,000	263,000	3889	303	12.8	66	20	46
Johns Hopkins Univ.	311,870	211,013	651	172	3.7	324	150	174

I must here express my gratitude for the kind assistance and hospitality that I received in the investigation. Although registrars are overburdened with requests for all sorts of statistical information and professors have suffered much from misquotation and presidents have learned that men who come "to write up the university" have too often gone away to write it down, yet I found them

everywhere willing to give me what help they could to get a fair insight into the real workings of the university. In defense of my hosts I wish to have it understood that any adverse criticisms I may make on any university are based either upon my own observations or upon what I heard about it elsewhere; therefore, those with whom I associated while in the university are not to be held responsible for them.

EDWIN E. SLOSSON.

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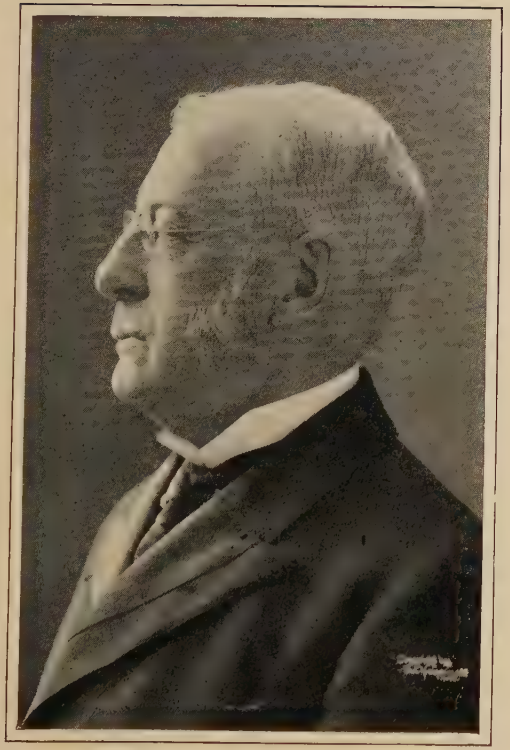
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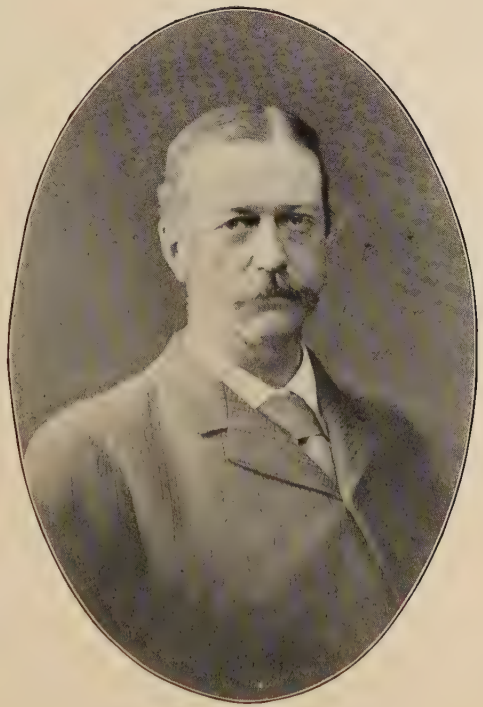
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GREAT AMERICAN UNIVERSITIES



CHARLES WILLIAM ELIOT.
President of Harvard University 1869–1909.



ABBOTT LAWRENCE LOWELL.
President of Harvard University.

GREAT AMERICAN UNIVERSITIES

CHAPTER I

HARVARD UNIVERSITY

THE story is told that one of President Eliot's predecessors was accustomed to conclude his chapel prayers by asking the Lord to "bless Harvard College and all inferior institutions." Whether there is any documentary evidence for the anecdote I do not know, but this is unnecessary, because its authenticity is sufficiently proved by the fact that the prayer has been answered. Harvard College has prospered beyond all anticipation, and the inferior institutions have been blessed even more abundantly. In the total number of students receiving instruction during 1908–1909 Harvard with 4948 has now been passed by four other universities, — Columbia with 5633, Chicago with 5659, Cornell with 5238, and Michigan with 5223. But, as women are included in the totals in the four institutions last mentioned, it is only fair to count Radcliffe in with Harvard, in spite of the reluctance of Harvard to consent to such inclusion. This brings Harvard into the third place, with 5342 students this year.

Universities in the West and in the large cities are, however, growing more rapidly than Harvard, which will probably be outstripped in numbers by several other institutions before long. Wisconsin and California, for example, are reconstructing their buildings to accommodate 10,000

students, and at the present rate of increase the buildings are likely to be needed before they are completed. As the State universities develop their graduate schools, the number of those who go East for advanced work will decrease relatively, and perhaps actually, just as the number of American students in Germany has fallen off since the rise of true universities in the United States. Three years ago there were 200 American students in Berlin. Now there are only 68 men and 27 women.

As the accompanying table and curves show, Harvard University as a whole has not grown in the last ten years, and there is no apparent reason to expect any great increase except in the Summer School, which has unlimited possibilities.[1] The most interesting point in the registration figures is the decline in the Freshman and Sophomore classes. A geographical analysis shows that the loss is not from the West or South, but from New England. That is, Harvard still attracts students from a distance even more than ever before, but Massachusetts and the neighboring States are failing in their support. This, taken in connection with the fact that the New England colleges are growing rapidly of late, indicates a general belief that undergraduate work, at least for the first two years, can be done better in a college than in a great university.

Our American institutions of higher education have never been quite decided as to what they should call themselves or what they should do. But this cloudiness in regard to name and function is rapidly being cleared up now, largely

[1] I should state at the outset that in presenting such statistics of attendance I do not mean to imply that a university is the better for having more students. I am not at all convinced that, other things being equal, a boy with 5000 schoolmates has any better chance than with 500, and I am quite sure that with 10,000 he would be worse off unless they were more thoroughly organized and controlled than at present. It should not be assumed that a rapid growth is the outward and visible sign of an inward and spiritual grace.

through the influence of two powerful organizations, the General Education Board and the Carnegie Foundation, which is being exerted to that end. An academic opinion backed up by a capital of $60,000,000 is no longer merely "academic." When order is brought out of chaos, it seems likely that the natural cleavage plane between collegiate and university work will be found to be between the Sophomore and Junior year, about where it is in Germany.

This President Harper foresaw, as he foresaw many other things now coming to pass, and he endeavored to provide for it by cutting the undergraduate course at Chicago into two parts of two years each, the Junior College and the Senior College, and turning over the work of the former as far as possible to smaller affiliated colleges in all parts of the country. Unfortunately this plan was never thoroughly carried out, and the distinction between the two colleges in Chicago is now little more than a catalogue fiction.

This plan President Jordan now desires to have carried out in Stanford University, believing that graduate and professional students cannot do their best work in an institution where they are largely outnumbered by younger men requiring a very different sort of training.

The plan favored by the two Western presidents seems likely to be imposed upon Harvard by outside pressure. Harvard is constructed upon the theory that there should be no definite dividing line between any of the college years or even between undergraduate and postgraduate work, but parents are determined to make such a dividing line by keeping their boys out of the university until the Junior year or later. The faculty has recently endeavored to check this tendency to substitute non-residence work in the earlier years by limiting the amount that can be accepted in place of work done at Harvard and by imposing a stricter examination for advanced credits. Harvard and Stanford are thus as far apart in educational policy as the Atlantic is

from the Pacific. Stanford wants to get rid of its Freshmen and Sophomores. Harvard fears to lose them. Perhaps the fact that at Harvard the undergraduates pay in tuition fees more than their share of the expense of instruction, while at Stanford they pay nothing, is one cause of the difference in the way they are looked upon.

So long as Harvard retains its prestige as the foremost of American universities — and there are no signs yet of its losing that rank — its degrees will be sought by ambitious students from all parts of the country. It can maintain its numbers and extend its influence if it is not made too difficult for students to transfer to Harvard for the last two years of their college course, or for graduate study. A more liberal policy in the allowance of credits for collegiate work done elsewhere, even where this is not strictly equivalent to that of Harvard, and in the acceptance of preparatory work, even though this may not be done in the Harvard way, would enable the university to concentrate its efforts on the advanced work, in which it has fewer rivals. This can be more readily done under the free elective system than in an institution which prescribes a rigid sequence and range of studies. It does not involve the lowering of the present high standard of entrance requirements, or necessarily the abandonment of the examination system.

But the secondary schools, particularly in the West, are becoming "class conscious," and will no longer permit the colleges to dictate their courses of studies and how they shall be taught.[1] As Harvard becomes less of a New England college, it must condescend to coöperate with high schools all over the United States, for if it depends on its own special preparatory schools, it will lose not only in numbers, which may not be a real loss, but, what is important, in the quality of its students. Out of 199 scholarship

[1] Mr. Flexner's harsh criticism of university methods in his recent book, "The American College," is one of the signs of the times.

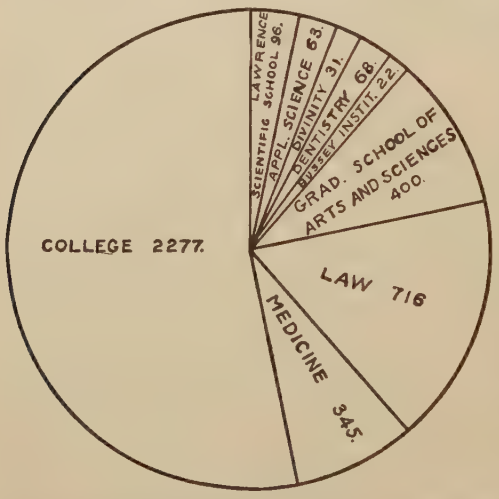
holders in 1905–1907, 129 were prepared in public schools, 49 in endowed schools, and 21 in private schools. About a third of the students at Harvard are now prepared in the public schools, and, as a rule, they stand higher in both admission and graduation examinations. These facts, as President Eliot says, "so far as they go, tend to prove that the product of the public schools has more character and power of work than the product of the other schools."

Harvard has of late shown a disposition to modify its entrance requirements in conformity with those of other institutions and the desires of the secondary schools, as in dropping Latin poetry, while insisting on admission by examination alone and maintaining an entrance standard higher than any other university. In requiring examination for entrance to college, Columbia, Princeton, and Yale stand with Harvard. The other universities have succumbed to the temptation, or have become convinced of the educational advantages, of admitting on certificate. In the State universities the opinion is generally and sincerely held that the certificate plan is the better, but since their policy is obviously to keep a close connection with the high schools of the State, it is more to the point to quote Stanford. That university now makes little use of entrance examinations, but admits on probation by a form of certificate in which a personal and specific recommendation by the principal is regarded as an important factor. Here again is a striking contrast between these two endowed universities so similarly situated. It is harder to get into Harvard, but, once in, comparatively easy to stay there. It is easier to get into Stanford, but a great many students fall out by the way. The difference is essentially whether the sifting can be best done at the door of the university or in the classroom.

The stringency of the Harvard entrance requirements is

ameliorated by special action of the faculty in deserving cases, and by admission with conditions. In 1907, 55 per cent of those admitted had not fulfilled the entrance requirements.

It is impossible to compare admission requirements by merely quoting the number of points or units from the various catalogues, because these have very different meanings. Each college has its own system of valuation, and is generally unable to convince other colleges, or all of its own faculty, of the justice of its system. So I hasten to take shelter under the authority of the Carnegie Foundation, which has made a special study of the question, and by educing the entrance requirements to a common denominator of its own, gets the following results for our endowed colleges: Harvard, 16; Princeton, 15.8; Cornell, 15; Johns Hopkins, 15; Stanford, 15; Pennsylvania, 14.5; Yale, 14.5; Columbia, 14.5.



DISTRIBUTION OF HARVARD STUDENTS 1907–1908.

But any system of valuation can be attacked, because there is no objective standard. Being a question of taste, there is no end of dispute about it. Every faculty or committee meeting which has to deal with admission requirements, graduation qualifications, adoption of curriculum, elective system, migration of students, or change of courses, finds at the bottom of it this matter of the equivalence of studies; and it would be appalling to know how much scholas-

tic time and temper have been wasted over the interminable question. It is, for example, hard to ascertain how many hours of blacksmithing are equal in educational profit to one hour of piano-playing, because few people are equally proficient in both. Educators are likely to come to an agreement on this question about the same time that economists agree how high a wall a bricklayer would have to build to entitle him to hear Caruso sing. There are educational Marxians whose theory of value leads them to reduce all studies to a common level of labor hours, but this is generally modified by some acknowledged or unconscious preferential weighting. Even Harvard, which has been conspicuous for this Marxian tendency, has handicapped some of the sciences, such as zoölogy and botany, and has favored Greek. But, as President Eliot says: "This artificial stimulation of the study of Greek does not appear to be successful, unless perhaps in retarding the decline of the study. The selection of Greek in the June examinations for the last five years has been as follows:" —

	1903	1904	1905	1906	1907
Elementary Greek . .	141	121	105	95	82
Advanced Greek . . .	276	264	249	226	196

As I was writing this I was interrupted by a call to look over a bound volume of *The Independent* for the year 1850, and, my eye being sensitive to the word Harvard, I caught it in glancing down the long column. There was an item setting forth the same complaints that are now made against Harvard, that it is expensive, aristocratic, and does not have enough students from Massachusetts. The Legislature had appointed a committee to see what could be done to save "this State institution" from its evil ways. There were only twenty-three undergraduates from Massachusetts, the college was costing $60,000 a year, and yet the students

were charged exorbitant prices, $15 a year for room rent and $75 for instruction.

Harvard has had the good fortune to outgrow its song. The gloomy prophecy implied in the closing lines of "Fair Harvard," —

> "Be the herald of light and the bearer of love
> Till the stock of the Puritan die,"

that the future of the university is dependent upon the perpetuity of the Society of Mayflower Descendants, is already disproved. The old stock has been successfully grafted with new life. From a State university it has become national, and is now one of the leaders in the new international movement, which is one of the most striking developments of American universities at the present time.

Harvard offers more courses in a greater variety of subjects than any other American university. It has not only the largest faculty, it has also the most eminent. The latter fact can be stated with as much positiveness, although not with the same definiteness, as the former. We are not, however, without numerical data on this delicate question. Professor J. McKeen Cattell, of Columbia, a few years ago prepared a directory of Americans who had made contributions to science, about 4000 in all. From this list the thousand most prominent names were selected and these arranged in ten groups according to their achievements in the judgment of ten of the foremost men in each of the twelve sciences considered, *i.e.* mathematics, physics, chemistry, astronomy, geology, botany, zoölogy, physiology, anatomy, pathology, anthropology, and psychology. The results show that there is very little difference of opinion as to the relative standing of men of eminence as judged by those who know most about their work. The curious objectivity of the scientific attitude is brought out by the fact that a man's error in the estimate of his own achievements is likely to be less than that of any one of his

colleagues.[1] Probably authors and artists would not be so successful in ranking themselves. A few of the figures that concern us here are given in the following table:—

TABLE SHOWING THE DISTRIBUTION AND EDUCATION OF THE THOUSAND LEADING MEN OF SCIENCE

	Men of the First Rank	Men of the Second Rank	Total of the Ten Ranks	Where the 1000 Men Studied
Harvard	19	8	66	237
Columbia	7	6	60	78
Chicago	7	10	39	39
Cornell	3	6	33	74
Johns Hopkins	9	2	30	171
California	1	2	27	22
Yale	2	5	26	93
Michigan	1	3	20	53
Wisconsin	1	3	18	23
Pennsylvania	2	1	17	28
Stanford	3	1	16	—
Princeton	—	—	14	43
Minnesota	—	—	10	—
Illinois	—	—	6	—

The first column shows the hundred foremost men of science as distributed among the fourteen institutions under consideration. The next column shows those who are ranked as the second hundred, and the column of totals gives these and the other eight groups of one hundred each. It appears from this that Harvard possesses nineteen of the hundred men who, in the judgment of their American colleagues, are most eminent in science, eight men out of the

[1] For the method of selection and probable error see the original paper in *Science*, November, 1906. For the list of names see "American Men of Science," A Biographical Directory, Science Press, 1906. Professor Cattell's thousand has been sharply criticized for its omission of many prominent men. The membership of the National Academy of Sciences, given in Chap. XV, is less open to question, and illustrates equally well the point under consideration, the preëminence of Harvard.

hundred of the second degree of eminence, and sixty-six of the thousand. The last column shows where these thousand leading scientists received their training; 237 having taken undergraduate or graduate work at Harvard, 171 at Johns Hopkins, and 93 at Yale. I am not aware that any similar attempt has been made to get a consensus of opinion on the distribution among the universities of scholars outside the physical and natural sciences, but there is no doubt that in the humanistic branches the relative standing of Harvard would be quite as high. It is the chief glory of Harvard that it has never underestimated the importance and value of men, has never succumbed to the temptation to cut salaries in order to put up splendid buildings. Some other universities have found that there are many things which show off better than brains. The Corporation has always held that its income was to be spent for the education of the present generation, and it has so spent it, year by year, neither hoarding for the future, nor borrowing from it.

An incident that occurred during the negotiations for the merger of the Massachusetts Institute of Technology with Harvard University may be mentioned here for the benefit of other universities. When the matter was being discussed in a faculty meeting, it was shown that about three fifths of the funds for the combined school would have to be supplied by Harvard. Some one thereupon asked, "But what will Harvard get out of it?" President Eliot settled the subject by replying in his usual calm and decisive manner: "That question has not been raised. The matter is in the hands of a joint committee of gentlemen whose sole interest it is to promote technical education in Massachusetts."

Harvard University is so complex and diversified that almost any statement may be made about it with some degree of truth, except a general statement. Each department has an independent life and character, with its own theories, methods, and traditions. Nobody worries because

they are not alike. Nobody tries to make all the rest adopt his pet plan.

The Harvard man, anyway, is not apt to be a propagandist. He does not force his views upon other people; perhaps because he lacks confidence in his views, perhaps because he lacks confidence in other people. A Harvard professor, of whom I inquired about the spirit of the university, said, "A healthy spirit of pessimism prevails in all departments."

In order to get some definite information in regard to the actual workings of the elective system, I obtained, through the kindness of the president's secretary, Mr. Jerome D. Greene, copies of one hundred record cards of the class of 1907, taken in alphabetical order, but omitting the names. The study of these brings out many interesting points, though only a few of the most significant can be mentioned here. According to their choice of studies the records of these students may be arranged in four classes: First, Concentrated, in which the courses are practically confined to a particular field; second, Correlated, in which the most of the courses are grouped around a definite subject or "core"; third, General, which shows that the student was seeking a general education, arranging his courses accordingly, without marked coördination; fourth, Scattered, in which the student was desirous merely of getting through, disarranging his courses accordingly.

I.	Concentrated	17 per cent
II.	Correlated	53 per cent
III.	General	16 per cent
IV.	Scattered	14 per cent

Whether this is regarded as a good or bad showing for the elective system depends on the reader's educational philosophy. More than half of them are sufficiently diversified and specialized to be called a satisfactory undergraduate course according to the consensus of opinion among

educators, in so far as there is any consensus of opinion among educators on this point. About 70 per cent of them could be fitted into the course of study of almost any of the colleges having the "major," "semi-elective," or "group" system, without more twisting, bargaining, and special action than is customary in these colleges.

The question comes in regard to those who deviate from this norm in one direction or the other, and may be used as evidence in support of the two opposite objections to the elective system. It will be noticed that rather more students take advantage of the system for the purpose of undue specialization than for the purpose of getting through easily, and, in my opinion, this is the chief danger of unrestricted election. It is intensified by the new Harvard plan of degree with distinction, which puts a premium on limitation of field. Of these hundred men, forty-one were graduated with distinction, ten of whom took what I have called a "Concentrated" course, that is, more than half the group were so honored. Of the "Scattered" men only one was graduated with distinction. There is not so much harm done when a lazy student takes a scattered course as when a good student takes a narrow course. The mind of the poor student is not likely to be injured by desultory study, and it does not matter much if it is, but a man with a powerful mind, asymmetrically trained, is too dangerous to be let loose in the community.

Let us consider two examples of these highly specialized courses.

THE COLLEGE COURSE OF MR. A

Freshman, 1903–1904	Sophomore, 1904–1905
Greek — Hist. of Lit.	Greek — Lit.
Greek — Comp.	Greek — Comp.
Latin — Lit.	Latin — Lit.
Latin — Comp.	Latin — Comp.
German — Gram. and Comp.	Govt. — Const.
History — Medieval.	

Junior, 1905–1906
Greek — Lit.
Latin — Lit.
Latin — Life of Romans.
Latin — Lit.
English — Amer. Lit.
Philosophy — Hist. of.

Senior, 1906–1907
English — Lit.
English — Lit.
Classical — Phil.
Greek — Lit.
Greek — Lit.
Greek — Lit.
Latin — Comp.
Latin — Lit.

This course is more narrow than that of the classical college of fifty years ago. It does not appear that this young graduate learned anything about the world he lives in or the people he lives with. There is no trace of mathematics and science, physical or biological; no history except medieval; no study dealing with the thought and work of the present generation except constitutional government, and possibly the latter part of the courses on the history of philosophy and literature. Yet for this he received the degree of A.B. *magna cùm laude*. Should he have received even A.B., if that means a *liberal* education?

It is hard to match this from the other wing of the university, but here is one, a transferred Lawrence student:

The College Course of Mr. B

Freshman, 1903–1904
English — Comp.
German.
French.
Algebra.
Trigonometry.
Chemistry.

Junior, 1905–1906
Math. — Calculus.
Chemistry — Carbon.
Chemistry — Carbon.
Chemistry — Phys.
Chemistry — Quant.
Chemistry — Gas.
Chemistry — Indust.

Sophomore, 1904–1905
Math. — Sol. Geom.
Physics — Adv.
Chemistry — Adv.
Chemistry — Anal.
Chemistry — Quant.
Chemistry — Phys.
Analytic Geom.

Senior, 1906–1907
Chemistry — Organic.
Chemistry — Organic.
Chemistry — Elec.
Chemistry — Biol.
Mineralogy.
Physics — Gases.

And he also receives praise, though not much. He also is certified as an educated man, yet his motto is evidently "Nothing humanistic has anything in it for me." I do not mean to imply that such narrowly specialized courses as these may not be justified in individual cases. But the main argument for requiring a college course as an antecedent to professional study is that it provides a broad cultural foundation for future specialization, and such instances as these show that under the free elective system there is no assurance that such a foundation has been laid. The technologists have very generally come to believe that their students need to have some training in literary, esthetic, and historical studies. The humanists, or some of them, are willing to concede that a man may be the better for a dip into science. There are two plans now proposed for bringing in these cultural or avocational studies, the perpendicular and the horizontal plans. The perpendicular plan provides that throughout the technological or professional course one or more studies must be chosen from other departments, preferably as remote as possible from the vocational study. This plan does not work very well, because the cultural studies are contemned and neglected, and are apt to get crowded out. The horizontal arrangement puts a college course underneath all the professional and technological schools. This is the Harvard plan, but it also does not work well, because the cultural studies are apt to get crowded out, as we have seen.

Of course, in judging of any particular case we must take the whole educational career into consideration. If, for example, Mr. A is going to devote the next four years exclusively to the study of aeronautics, electrons, or Mendelism, or some other ultra-modern and scientific subject, he will come out with a tolerably well-balanced education. Similarly, Mr. B's college course would enable him to concentrate his attention on some historical, sociological, or

literary subject without fear of becoming too narrow. But I find on reference to my notes that these men have adopted the opposite policy from that I have indicated. Both have entered the graduate school for three or four years of specialized work, but Mr. A is going to devote himself to the classics and Mr. B to chemistry! Here is another young man who has taken eleven courses in German, two in English, three in French, and two in Italian — nothing but language and literature in the four years except three courses in beginning economics, botany, and chemistry; not a bad education for a man who is going to bury himself in the backwoods, where he will be out of reach of books, and for the rest of his natural life will have to draw his literature from his well-stored mind. This may be the case, for his occupation is put down as "lumberman." Even then, I venture to suggest, though at risk of having such a long and ugly word as utilitarianist applied to me, that he should have mixed in a trifle of mathematics, botany, or forestry.

It is probably because they have no definite aim in life that so many students elect a shotgun course. Here is a good example of our Group IV: —

THE COLLEGE COURSE OF MR. C

Freshman, 1903–1904
Greek — Hist. of Lit.
English — Comp.
French — Beg.
History — Medieval.
Botany — Beg.
Zoölogy — Beg.

Sophomore, 1904–1905
Latin — Lit., Adv.
German — Gram. and Comp.
French — Adv.
History — European.
History — European.
Government — Const.

Junior, 1905–1906
English — Lit.
German — Adv.
Economics — Beg.
Philosophy — Beg.
Music.
Astronomy — Beg.

Senior, 1906–1907
Chemistry — Beg.
English — Shakespeare.
Anatomy — Gen.
Music — Adv.

He began fifteen distinct subjects, but carried none of them beyond two years. His grades are all C's and D's, and he is now a teacher, transmitting his educational theory and practice to the second generation. One would expect to find these scattered courses altogether different, but there is a curious similarity between many of them. The students of the scattered mind are devoted equally to Music and Anatomy, are inclined to pry into the Private Life of the Romans, Athenians, and North American Indians, are strongly drawn toward Slavic Literature and the History of Art, and before the end of their course are likely to need Poor Relief. It should be said that the worst effects of the elective system are not shown at Harvard, but in the institutions that have attempted to imitate Harvard in the multiplication of courses without sufficient resources.

I do not mean to imply that the studies called in various colleges "soft," "snap," "athletic," or "pleasant" courses are necessarily objectionable. On the contrary, it seems to me that the chief fault of the free elective system is that it assumes and enforces an unnatural equivalence of studies in the matter of difficulty, as in other respects. This has led some departments, especially the esthetic and literary, to introduce a large amount of extraneous and fruitless drudgery into their courses to avoid the reproach of being called too easy, and by doing this have perverted these studies from their proper aim and deprived them of their true educational value.

A frank recognition of the fact that certain studies are not naturally, and ought not to be made, so hard as some others, and a due allowance for this by restricting the number of such courses or the credits to be given for them, would obviate the difficulty and avoid the necessity of eliminating or deforming them. Harvard could have better spared some of its hardest taskmasters rather than to have lost Professor Norton's and Professor Shaler's inspiring



Harvard University.

MEMORIAL HALL.

lectures, although these were sought by many unworthy of the privilege.

That many students abuse the elective system is obvious, but the prescribed system abuses many students, and this is worse. My own opinion is that the advantages of the elective system, especially its flexibility and adaptability to the needs of the individual, decidedly outweigh its disadvantages, but in order to secure these advantages, as well as to prevent the misuse of its privileges, the choice of studies should be controlled, not by rules and restrictions, although these may be needed, but by personal guidance. The most extreme cases of specialized, scattered, or topsy-turvy courses may be justified by peculiar circumstances. The examples I have cited with disapproval may have been the best possible courses for these particular men. Who knows? Not, I venture to say, the president, dean, adviser, or professors who had them in charge. A prescribed course is never quite right, but it may never be so far wrong as an elected course. A ready-made suit of clothes is likely to fit better than a suit made for a man who pays no attention to the opinions of his tailor.

The system of free election, with which President Eliot began his administration, will probably not long survive it. It was a great reform, because it introduced the principles of freedom and individuation into the machine-made education of the day. It will be the duty of President Eliot's successor to see that this individualized education is applied to the proper individuals.

Here is the weak point of all the great colleges, and even of the smaller ones — the lack of personal contact between teacher and student. It is not due to the influx of an overwhelming number of students, because the faculty has generally grown in proportion or more. It is partly due to defective organization and partly to the development of a new school of teachers, who detest teaching, who look upon

students as a nuisance, and class work as a waste of time. The ratio of students to instructors at Harvard is, as we have already seen, seven. It could therefore be reasonably expected that every student should have at least one friend in the faculty, some one who knows his training and home conditions, his mode of life and ways of working, his aims and prospects, his capabilities and deficiencies. How much and what manner of control should be exercised over him is another question. But whatever were done with him would be based upon personal knowledge. Surely an instructor of any grade could keep acquainted with seven young men without seriously interfering with his research work or his social duties, and he might find the knowledge thus gained of the workings of the adolescent mind useful to him in his business, whatever he conceived his business to be.

All the universities I have visited are awake to the need of improvement in this respect, and are more or less actively engaged in making motions for amendment. Princeton has shown the most enterprise in establishing the preceptorial system. In Harvard the adviser is supposed to make the acquaintance of the Freshmen in his charge, but this is generally a perfunctory relation, sometimes no more personal than the interpretation of the curriculum of railroad trains to the passengers in a union station by the Bureau of Information.

The publication of the Briggs's report [1] was the beginning of an era of reform in American collegiate instruction. Plenty of people had been saying that our college students studied too little, and nobody paid much attention, but when Dean Briggs demonstrated just how little they did study, the educational world took notice. It has been well

[1] Report of the Committee on Improving Instructions in Harvard College. *Harvard Graduates' Magazine*, June, 1904. It is reprinted as an appendix in Birdseye's "Individual Training in Our Colleges."

said that other colleges might have made as poor a showing as Harvard, but no other college would. If we may believe campus gossip, more than one rival institution made a similar investigation, but the outside world was not permitted to profit by it. That is not Harvard's way. The sharpest criticism of Harvard, as well as of the rest of the universe, has come from Harvard men.

In the Briggs investigation answers to letters of inquiry were received from 245 instructors and 1757 students. The comparison of the two brought out the interesting fact that an instructor usually estimated the amount of work done by his students at about twice what they were really doing. The average amount of work done in a course (one study) by an undergraduate getting high marks was less than three and a half hours a week. Since he was expected to carry four courses at a time, of three lectures a week, it was evident that good students were spending only about twenty-five hours a week in intellectual labor, even when we count in the twelve hours occupied in listening to lectures as intellectual labor. And this was more than they were required to do. Many of them got through on much less work. Six courses taken by 876 students involved less than two hours' work a week each.

The frank and detailed criticisms of the students on the courses they had taken were typewritten without their names and filed for the instruction of the instructors, who in this way had a unique opportunity of seeing themselves through their students' eyes. As a result some courses were dropped, others reformed, and an hour of quiz and conference in small sections substituted for one of the weekly lectures. This plan has the further advantage of permitting a partial segregation of students according to their ability and preparation. After the first month the men doing work of A grade are gathered together as far as possible, the B men in another group, etc. The conference work is naturally

of a very different character in the various sections. In the A section the instructor acts as moderator, keeping the men from talking too much; in the D section he must be an instigator and keep on prodding them.

As a result of these and similar reforms, such as the introduction of "degree with distinction" and the "Dean's list" of earnest students, there has been a marked improvement in undergraduate work at Harvard, although the students do not yet work so hard as in the Western universities. In the professional schools a different spirit prevails; the Harvard Law School is reputed, East and West, to have the hardest working and most enthusiastic body of students in America. Those who oppose the Harvard collegiate system on the ground that the desultory and leisurely habits it permits or promotes unfit a man for earnest work later are confronted by the fact that the miracle does happen. The dilettante and indifferent student in some cases does turn over a new leaf when he enters upon his professional work, and competes successfully with men more strictly trained. Still, I do not think it is safe to rely upon miracles.[1]

Harvard stands opposed to any method of telescoping the university course, or any "repeating" scheme by which the same study is counted twice in the work for different degrees. It insists upon the regular four years' college work as a preparation for professional study, but it is willing, even desirous, to have this work done in three years. That this can easily be accomplished by any earnest student has been demonstrated, and it will not be long before a student who spends four years in college will be looked upon as lazy or unlucky, just as the student who takes five to

[1] The report of the Faculty Committee on this point, published in the *Harvard Graduates' Magazine*, March, 1910, confirms this skepticism. The figures prove that the man who wins honors in law school without having won them in college is rare, and that the "sport" of really low standing in college who achieves distinction in law school is almost a myth.

get through is now. Of the 379 men who received the degree of A.B. in 1908, 137 had completed the requirements in three years, and there were 45 more who were only one course behind.

This is accomplished partly by working in the summer school, partly by obtaining credits at entrance for advanced courses, partly by taking more than four courses at a time. The first two are commendable, the last open to the very serious objection that it dissipates the energies and distracts the mind. In recent years about a third of the students who have thus shortened the college term have carried six courses for one year, and another third of them for two years, and a few for all three. To be sure, these students got better grades than those who took less work, but that is chiefly because they were better students. It is one of President Eliot's fundamental theories that a study should be taught in the same way to all students, whatever may be their present inclinations and future intentions, but nevertheless it seems to me that it would be better to provide special classes for the earnest students, so arranged that they could finish their college work in the three years without carrying more than four, preferably no more than three, different studies at a time. This arrangement would have the further advantage of forcing into prominence the question of whether it is worth while to keep up the other classes for the students who are not in earnest.

Revolutionary as were the changes made by President Eliot at the beginning of his administration, they were not more important than those of the last few years, particularly the establishment of strictly graduate professional schools, including technological and commercial branches. No other university has set so high a standard. It is not desirable that all universities should, for not every one who wants to be an engineer, doctor, or business man is young enough or rich enough to devote three or four years to a

preliminary collegiate education, and yet he should not be deprived of the opportunity of professional training. But Harvard, unlike a State university, is not under obligation to serve the needs of all the people of a given community. It can pick such students as it wants from all over the world, and it has the opportunity of demonstrating that a long and broad education pays, in the best sense of that word.

This means in some cases the creation of a new type of professional training. Dean Gay, for example, has to show that "accounting" as taught to college graduates is something very different from and superior to what goes by the same name in business colleges, commercial high schools, and correspondence courses. He must disprove the statement that "the only place to learn is in the office," as it has been disproved in medicine and law. We must look with admiration and sympathy upon the thirty-nine young men who this year have signified their willingness to be the first to bear into Wall Street the banner with the strange device M.B.A. They will meet with sharper scrutiny and distrust than their successors, yet their training — with due respect to the present equipment of the School of Business Administration — will not have been so competent.

The new Graduate School of Applied Science takes the place of the undergraduate Lawrence Scientific School, closed at the end of its sixtieth year. A million dollars from the estate of the late Gordon McKay will be immediately available for use, and will be followed by five or more millions. This will permit the development of advanced courses of instruction and research in practical science to an extent unprecedented in this country. Professional degrees are offered in the following subjects: Civil, Mechanical, and Electrical Engineering, Mining, and Metallurgy, Architecture and Landscape Architecture, Forestry, Applied Physics, Applied Chemistry, Applied Biology, and Applied Geology. Such a prospectus as this arouses the imagination.

When we read the list we catch a glimpse of a new civilization based upon a technology yet unknown. In fact, it will be impossible to find suitable men for some of the chairs which are ready to be established.

The Bussey Institution was one of the earliest of agricultural colleges in this country, but has long since been overshadowed by those founded in every State through national aid, and has of late been the resort of students seeking easy berths. It is now transformed into a laboratory for the training of men in our new professions of biological technics. Botany and zoölogy have ceased to be observational and descriptive sciences. They are entering upon their creative period, and, like chemistry and physics, putting new tools in the hand of man. The Bussey Mendelist will not be content to catch wild animals, and describe and mount them for the museum. He will make new species to suit himself, drawing up beforehand his plans and specifications as an architect sketches a future building or a chemist draws a graphical formula of the next unknown compound he is going to prepare.

In these higher branches the distinction between pure and applied science fortunately disappears. The line dividing them is an imaginary one, and there seems to be no sufficient reason making the two schools so distinct. A student in physics in the School of Arts and Sciences may be doing the same or even more practical work than a student in the School of Applied Science, and *vice versa*. The matter of degrees is conventional and arbitrary, as it is everywhere. Whether a man is called a Doctor of Philosophy or a Doctor of Science does not necessarily depend upon the type of his mind or the dominant character of his education or the subject of his original work. It may depend merely on whether he did or did not read "De Bello Gallico" in the original seven years before. Imperious Cæsar still rules.

The Divinity School was the first of the professional

schools to become strictly graduate. It is reinforced this year by Andover Theological Seminary, which was founded just a hundred years ago in opposition to Harvard Unitarianism. Now it is allied with its former antagonist, bringing with it to Cambridge its million-dollar endowment, its seven professors, and its four students. The most original and interesting feature of the Harvard Divinity School is the Summer School of Theology. In 1908 this was devoted to the subject of "The Relation of Christianity to Other Religions," and was attended by 66 students, of whom 57 were ministers drawn from 12 different denominations, the Episcopalians leading with 17 representatives. Five of the students were women.

The Medical School of Harvard has only one rival in advanced work, that of Johns Hopkins. Like Johns Hopkins, it is now located at a distance from the rest of the university, and is practically an independent institution, with a student life of its own. Its five new marble buildings, erected at a cost of about $3,000,000, are unequaled in the United States. Three of them were given by J. Pierpont Morgan, one by David Sears, and one by Mrs. Collis P. Huntington, while an endowment fund of a million dollars was provided by John D. Rockefeller. Connected with the medical group is the new building of the Dental School, the only one of the professional schools which does not require a bachelor's degree for entrance.

The new law and medical buildings, splendid as they are, do not add to the architectural attractiveness of the university as a whole, but rather make more conspicuous its incongruities. The stranger who has formed a mental image of Harvard corresponding to his appreciation of its history and standing is painfully disappointed when he visits Cambridge. He enters the yard through one of its ostentatiously unpretentious gateways, and finds a confusion of buildings, old and new, handsome and homely, dormitories,

laboratories, chapels, offices, lecture halls, but he is likely not to find the buildings he wants, for these may be scattered anywhere around the town, mixed up with dwelling houses and stores. In a raw Western university, dependent for its buildings on the spasmodic generosity of legislatures, such a state of things might be excusable, but not in the oldest and richest of American universities, long under one administration. I do not mean that all the buildings should be alike, — Columbia and Chicago err on the other side, — or that a larger proportion of the income should have been spent on buildings; but convenience of arrangement and unity of design could have been attained without difficulty. The present condition seems to be the consequence of a lack of forethought and a willful disregard of appearances.[1]

The worst architectural deficiency is the library. No university has a large enough library building, not even Columbia, but Harvard's is the most inadequate, even with its recent extensions. Harvard has the largest library of any university, over 850,000 volumes, and it claims to make the most use of its books. Its building should be the finest of all, with the best possible system of seminar and reading rooms.

Radcliffe College is still regarded, and, what is worse, regards itself, as an "annex," although it does not use the name. It is neither free nor equal. Harvard, which boasts of its democracy and welcomes the races of the antipodes, meets the demands of American women for higher education with a grudging concession and an ostentatious discrimination. The catalogue of Radcliffe is so extremely feminine in its modesty and diffidence that I suspect it is written under masculine dictation. Other college catalogues are inclined to exaggeration. Radcliffe minimizes or omits to

[1] For a really competent criticism of the architecture of our leading universities, see the series of articles published in the *Architectural Record* beginning November, 1909.

mention its advantages. If it did not, it would soon more than double in numbers, and a thousand women are not wanted in Cambridge. It is amusing to see what opposite measures are taken by different institutions in their attempts to ward off the woman's invasion. Yale admits women to the graduate courses to work for Ph.D., but refuses to grant M.A. because that would be too attractive. Harvard, conducting this branch of business under the firm name of Radcliffe, offers the master's degree, but does not mention the fact that women can do and actually have done work for the doctorate in several departments.

The summer school will do much toward breaking down the artificial barrier between the sexes. In the summer of 1908 there were 856 men and 476 women at Harvard. The university authorities will learn by observation how groundless are their fears lest the presence of the women should have a bad effect upon scholarship, or morals, or manners, or whatever it may be that they fear.

Besides the summer school, about seventy of the graduate courses in Harvard University are now open to women. The instruction in all the work of Radcliffe is given by Harvard men, the college is under the control of the Harvard Corporation, and the diplomas are signed by the Harvard president. It is very hard to ascertain where the line is drawn between the two institutions, and altogether impossible to ascertain why it should be drawn. The fact that extra pay is given when a special women's class is formed tends to increase the segregation. It also has a tendency to throw the instruction in Radcliffe into the hands of younger and inferior men.

The question of social intercourse is, of course, entirely distinct from that of scholastic equality, but is interesting in itself. I asked a Harvard professor why the Harvard men did not associate with the Radcliffe students, and he said it was because the latter were of inferior social rank,

"being mostly from around Boston, and merely teachers." A student I met at the Memorial dining table gave another reason. He said he had called on two Radcliffe girls the evening before, and "I never had a more tiresome time in my life. Those girls study so hard all day that they haven't a bit of life left in them." I sympathized with him, also with the Radcliffe girls, for I, too, had had to listen to his conversation.

The most conspicuous deficiency of Harvard has been the lack of a strong department of applied sciences. This is about to be remedied by the aid of the McKay millions. But Harvard also needs a strong department of applied humanistics. In letters and the fine arts its tendency is toward the critical rather than the creative. Its men of science are in the thick of the fight, inventive, productive, progressive. Its men of letters seem to stand aloof, commenting and criticizing, and more concerned with the past than with the present and future. No doubt it would be well if a scientist should once in a while climb up out of the dust to survey the field, even at the risk of getting his head in the clouds, but if they all tried to be war correspondents there would be no war.

In a late number of the *Harvard Graduates' Magazine* I find references to over a hundred recent publications by alumni and officers of the university. A very large proportion of them must be classed as parasitic literature. I do not use the word "parasitic" in a derogatory sense. One could hardly do so, remembering how much the orchid and the mistletoe contribute to the pleasure of life. I mean merely that they are books growing out of other books, such as translations, annotated texts, compilations, criticism, and literary history. None of these Harvard publications seems to me likely to provide material for future commentators to work upon. There are many valuable publications, especially in history and civics, but only a few

that could be put into the category of what is called by some "pure literature" and others "mere literature." Among these are possibly three volumes of essays, three of plays, and three of fiction, the last consisting of a detective story, a boy's book, and a comic sketch. And the editor informs us that the "past year has been marked by a most unusual degree of literary and scholarly productivity on the part of the officers of the university." Perhaps no other university could make a better showing in this particular, but we expect more of Harvard than of any other university in a literary way. We have been led to expect more by the traditions of the institution and by what Harvard men say about it.

In methods of administration all the other universities of America have gone to school to Harvard, and those who have been slow to learn her lessons have usually suffered for it. When a professional school for the training of college presidents is established, its best textbook will be "University Administration," by Charles W. Eliot.

Harvard has been in education what France has been in sociology, the first to be confronted with the new problems arising out of changed conditions of life. Harvard has had to deal without precedent with the difficulties of handling large numbers of students, of the admission of new sciences, of the relation of the professional school to the college, of the demand for industrial education, of increased cost of living and instruction, and of the growth of a student leisure class. These, and innumerable minor questions of the kind, President Eliot has had to meet and solve, or at least to settle. He has not waited till difficulties came upon him, but he has met them before they came, for he, above other men, has the genius of the seer, the ability to recognize new conditions, and the courage to act accordingly. In social mathematics all the quantities are variables, always shifting in value by imperceptible degrees, but the commonplace

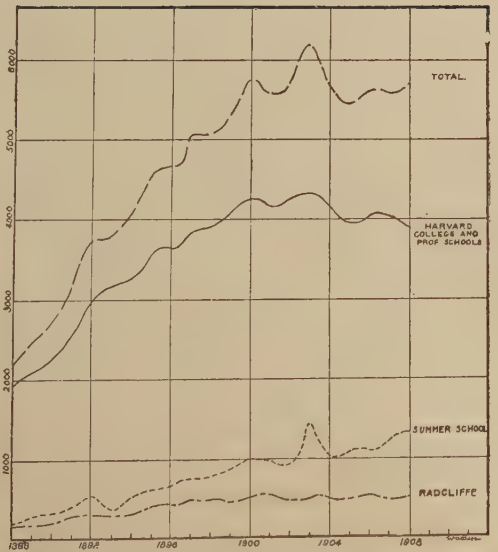
man who does not perceive this solves his problems by the old rules, and gets wrong answers.

Besides his insight and courage, President Eliot has been distinguished by his frankness, or, perhaps I should say, truthfulness, which includes that and more. The freedom of speech he has permitted those under him he has made good use of himself. He has never been cowed into conformity by the responsibility of his position, nor has he been tempted into eccentricity by his conspicuousness. I emphasize his courage and truthfulness because they are virtues not easily cultivated in the presidential office. In talking with many men of many faculties I have found the opinion deplorably prevalent that a college president is *ex officio* somewhat of a coward and a liar; President Eliot is not.

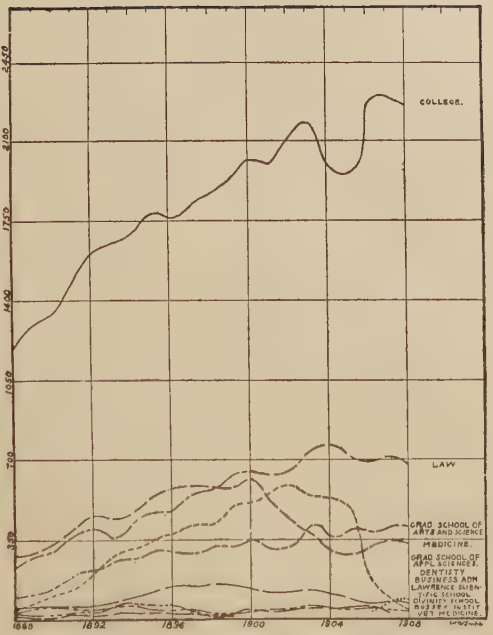
I could not have visited Harvard at a better time, for, although I did not know it then, it was the last year of President Eliot's administration, and therefore a turning point in the history of the institution. The university as it now stands is his work. For forty years it has developed under his direction and has been molded in accordance with his educational ideals.

Abbott Lawrence Lowell is his logical successor. Of none other of the numerous candidates suggested for the place could it be claimed that he possessed in so great a degree the peculiar attributes which the country has come to look upon as essential to a Harvard president. The Corporation had no more difficulty in recognizing his fitness for the position than the lamas of Tibet in picking out among the new-born babies of the land the one marked as the reincarnation of Buddha. By descent, birthplace, training, character, and achievements he is preëminently qualified. He possesses the triple talent necessary in an American university president. He has demonstrated his ability as a business man, a scholar, and a teacher. The change of administration will probably accelerate the changes which I have mentioned as taking place in recent years. As the new president stood upon the platform in front of University Hall on the sunny morning of Oct. 4, 1909, he forecast some of the reforms which he was about to initiate. I quote from his inaugural address,[1] the paragraphs relating to needed changes in the elective system and in the social life of the undergraduates: —

[1] *Harvard Graduates' Magazine*, December, 1909.



TOTAL NUMBER OF STUDENTS IN HARVARD UNIVERSITY FOR THE LAST TWENTY YEARS.



NUMBER OF STUDENTS IN THE VARIOUS DEPARTMENTS OF HARVARD UNIVERSITY FOR THE LAST TWENTY YEARS.

"May we not say of the extreme elective system what Edmond Scherer said of democracy: that it is but one stage in an irresistible march toward an unknown goal. We must go forward and develop the elective system, making it really systematic. Progress means change, and every time of growth is a transitional era; but in a peculiar degree the present state of the American college bears the marks of a period of transition. This is seen in the comparatively small estimation in which high proficiency in college studies is held, both by undergraduates and by the public at large; for if college education were now closely adapted to the needs of the community, excellence of achievement therein ought to be generally recognized as of great value. The transitional nature of existing conditions is seen again in the absence, among instructors as well as students, of fixed principles by which the choice of courses of study ought to be guided. It is seen, more markedly still, in the lack of any accepted view of the ultimate object of a college education."

* * * * * * *

"A large college ought to give its students a wide horizon, and it fails therein unless it mixes them together so thoroughly that the friendships they form are based on natural affinities rather than similarity of origin. Now these ties are formed most rapidly at the threshold of college life, and the set in which a man shall move is mainly determined in his Freshman year. It is obviously desirable, therefore, that the Freshmen should be thrown together more than they are now.

"Moreover the change from the life of school to that of college is too abrupt at the present day. Taken gradually, liberty is a powerful stimulant; but taken suddenly in large doses, it is liable to act as an intoxicant or an opiate. . . . The instructors believe that the object of the college is study, many students fancy that it is mainly enjoyment, and the confusion of aims breeds irretrievable waste of opportunity. The undergraduate should be led to feel from the moment of his arrival that college life is a serious and many-sided thing, whereof mental discipline is a vital part.

"It would seem that all these difficulties could be much lessened if the Freshmen were brought together in a group of dormitories and dining halls, under the comradeship of older men, who appreciated the possibilities of a college life, and took a keen interest in their work and their pleasures. Such a plan would enable us also to recruit our students younger, for the present age of entrance here appears to be due less to the difficulty of preparing for the examination earlier than to the nature of the life the Freshman leads. Complaints of the age of graduation cause a pressure to reduce the length of the college course, and with it the standard of the college degree. There would seem to be no intrinsic reason

that our schoolboys should be more backward than those of other civilized countries, any more than that our undergraduates should esteem excellence in scholarship less highly than do the men in English universities."

The plans for the segregated housing of the Freshman have not been published in detail at the time this volume goes to press, but new rules restricting the choice of electives have been adopted.[1] They provide that the student must take six of the sixteen required courses in one of the following groups: I. Language, Literature, Fine Arts, Music; II. Natural Sciences; III. History, Political and Social Sciences; IV. Philosophy and Mathematics; and six more must be distributed among the other three groups, at least one in each group, which leaves four courses freely elective. The examination of records of one thousand recent graduates showed that about twenty per cent of them would have had to make no change to have complied with the new rules and more than fifty per cent would have had to change only one or two courses. This agrees very well with the opinion I have expressed earlier in this chapter.

[1] *Harvard Graduates' Magazine*, Mar. 1910. *The North American Review*, Apr. 1910, contains an interesting discussion of "The Proposed Changes at Harvard" by Presidents Finley, Thwing, and Jordan.



Harvard University.

LANGDELL HALL.
The Law Building.



Harvard University.

THE MEDICAL SCHOOL AT LONGWOOD.

From left to right the buildings are : (1) Pathology and Bacteriology, (2) Anatomy and Histology, (3) Administration and Museum, (4) Physiology and Chemistry, (5) Pharmacology, Hygiene, and Surgical Research.

Academic Year	Harvard College	Lawrence Scientific School	Grad. School of Arts and Sciences	Grad. School of Applied Science	Divinity School	Law School	Medical School	Dental School	School of Veter. Med.	Bussey Institute	Grad. School of Business Admin.	Total	Radcliffe College	Summer School	Grand total [9]	Net total
1888–89	1180	35	95	—	26	217	275	42	23	6	—	1899	115	168	2182	—
1889–90	1271	65	107	—	35	254	290	35	20	2	—	2079	142	220	2441	—
1890–91	1339	88	125	—	41	279	328	44	20	7	—	2271	174	279	2724	—
1891–92	1456	118	189	—	39	363	399	51	31	14	—	2660	241	351	3252	—
1892–93	1598	181	206	—	41	394	451	53	39	6	—	2969	263	500	3832	—
1893–94	1656	280	252	—	47	353	446	63	50	13	—	3160	255	346	3761	—
1894–95	1667	308	258	—	50	404	454	80	62	12	—	3295	284	493	4072	—
1895–96	1771	340	285	—	41	465	531	102	55	15	—	3605	358	575	4538	—
1896–97	1754	368	295	—	37	475 [1]	554	131	52	11	—	3677	370	624	4671	—
1897–98	1819	410	287	—	40	548	588	130	33	11	—	3866	424	717	5007	—
1898–99	1851	415	322	—	26	551	560	139	25	23	—	3942	421	759	5092	—
1899–00	1902	495	326	—	27	613	558	131	24	27	—	4103	407	856	5366	—
1900–01	1992	507	341	—	28	647 [2]	605	126	18	33	—	4297	457	987	5741	—
1901–02	1983	549	312	—	37	628	506 [3]	105	— [5]	32	—	4152	456	982	5590	—
1902–03	2109	584	316	—	37	640	445	112	—	33	—	4276	429	945	5670	5468
1903–04	2073	548	402	—	52	738	383	115	—	32	—	4343	458	1391	6192	6013
1904–05	2009	530	366	—	43	758	307	106 [4]	—	33	—	4152	416	1007	5575	5392
1905–06	1899	504	394	—	37	717	287	86	—	39	—	3963	436	1076	5475	5283
1906–07	2247 [8]	204 [7]	387	29 [6]	39	697	320	65	—	43	—	4031	468	1093	5592	5343
1907–08	2277	96	400	63	31	716	345	68	—	22	—	4018	427	1126	5571	5346
1908–09	2231	39	460	70	30	681	319	66	—	—	56	3952	394	1349	5695	5342
1909–10	2256	13	423	83	48	760	312	86	—	—	73	4054	464	1377	5895	5558

[1] Admission requirement of a preliminary degree or the rank of Senior in Harvard College took effect this year.
[2] The above exception in favor of Harvard College Seniors was abolished, putting the school squarely on a graduate basis.
[3] Requirement of a degree for admission took effect. [4] Admission requirements raised. [5] Veterinary School closed. [6] School founded this year.
[7] Lawrence Scientific School closed to *new* students. The degree of S.B. as a general degree was established in the college, and all special degrees in applied science placed on a graduate basis.
[8] Including about 300 men transferred from the Scientific School.
[9] These totals do not represent the number of different individuals receiving instruction during the year, for many students in Harvard and Radcliffe take work in the Summer School, and in such cases are counted twice.

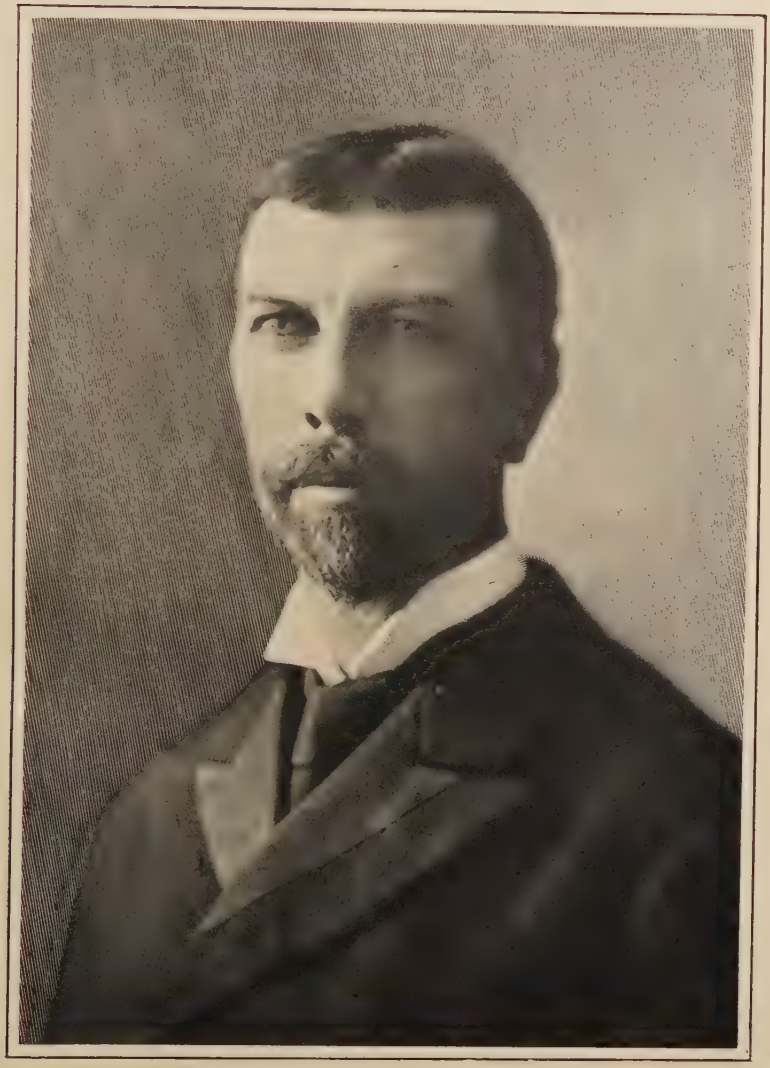
CHAPTER II

YALE UNIVERSITY

ALL State universities look alike to the average Eastern man. The average Western man couples Yale and Harvard in the same phrase as inevitably as he does the words "Scylla and Charybdis," "hearth and home," or "free and equal." He does not see how a color-blind man can tell them apart. But when he comes to visit Yale and Harvard and to associate with their people, he perceives not only the difference in their architectural physiognomy, but also something of the difference in the college spirit which is so strongly felt by the alumni of the two institutions.

This difference in spirit seems to me most clearly expressed by two books that appeared not long ago, "Pragmatism," by Professor James, of Harvard, and "Folkways," by Professor Sumner, of Yale. "Pragmatism" is the Harvard elective system applied to the universe. "Folkways" makes the Yale system of social control the fundamental principle of all morals and manners. The former book preaches a defiant individualism that would free itself even from the bonds of its own past, that would shatter this sorry scheme of things and then remold it nearer to the heart's desire. The latter book shows how completely we are ruled by custom and tradition, and how righteousness and conformity come to mean the same thing. It would be hard to imagine "Pragmatism" proceeding from New Haven or "Folkways" being written in Cambridge.

When I first went to Yale, I was timid in my inquiries



ARTHUR TWINING HADLEY,
President of Yale University.

about customs and traditions, for I did not want to make myself any more offensive than my profession required. In my school days at the University of Kansas there was only one persistent custom, that was for each class to disregard the customs which the preceding class had attempted to establish. And if a visitor from the University of Nebraska had ventured to hint that the University of Kansas had traditions, there would have ensued a physical infraction of intercollegiate amity.

But I discovered that Yale not only had traditions, but was proud of them, advertised them, capitalized them as part of the productive funds, used them to draw students, made them do much of the educational and nearly all of the disciplinary work of the institution. It was when I was talking with the man who is most alive with Yale spirit and most eloquent in its praise, — it was, as I have said, when I was talking with Secretary Stokes that I began to realize the value of these intangible assets. He had referred so many times to the Yale traditions in answer to my questions that I became a trifle annoyed, just as I get annoyed in talking with my spiritualistic friends when they persist in dragging ghosts into the conversation, for I do not believe in the existence of ghosts, either. Finally I burst out with, "But aren't there some traditions that you want to get rid of? Are the Yale traditions good?" Mr. Stokes replied with a gentle patience, "We think they are." I wanted to upset his calm confidence by bringing up some bad Yale traditions, but I could not think of any on the spur of the moment. Nor have I been able to since, at least none that are sufficiently discreditable to confound Mr. Stokes, or even to satisfy my own traditional prejudice against traditions. So I set it down here at the beginning, in black and white, that Yale University has traditions, that they are on the whole good ones and undeniably useful, and that if a university has to have traditions, — I am not quite ready to

admit that yet, — no other university in the country has a better lot than Yale. This may appear very trite and obvious to the reader. To me it was an astonishing and disconcerting discovery.

It embarrassed me because I had determined to disregard entirely the history of the colleges I visited and confine my attention to their present condition and future prospects. But every one I talked with at Yale brought up the past for my admiration. So I had to take it into consideration, for the past is not really past at Yale. It is part of the present.

It is different in the Western universities. There I found men reticent about the past and not overenthusiastic about the present, but when they began to talk of the future their eyes shone and their tongues were loosed. Another striking difference is in their way of explaining things. Ask half a dozen men in a Western university why certain things exist, and they will all give you reasons, often very different reasons, and sometimes incompatible, but all indicative of a kindly intention of satisfying the curiosity of a stranger. Ask a Yale man for the reason for anything, and he will give you its origin; and he thinks he has answered your question. The pages of my notebook read like the record of a game we used to play, Mismatched Questions and Answers.

"Why do all the dormitory windows have those big water bottles in them?"

"Because the city water was bad a few years ago."

"Isn't it all right now?"

"Oh, yes."

"Why do the college students have to attend chapel every morning?"

"They always have."

"Do not the scientific students need religious exercises also, or are they past praying for?"

"Chapel attendance has never been compulsory in Sheffield."

"Why do they close the front gates of the campus at night while all the other entrances are open?"

"They always close them at night."

"Do you think that Old South Middle harmonizes with the architectural scheme of the campus?"

"It was built in 1750."

"Don't you think that the *Lit.* would sell better if it had a new cover?"

"You don't understand. That is the original cover, and it has never been changed in the seventy-three years of its history."

Now I presume that there are reasons, very likely good ones, for all these things, and that I should have learned them if I had happened to have asked the right persons, but those I did ask usually gave me origins instead of explanations. Naturally I came to the conclusion that at Yale the origin usually was the explanation.

The fault of Yale is, in my opinion, not its traditions, but its traditionalism. It may be all right for a university to be conservative, but when it gets to taking pride in its conservatism it is in a dangerous state. The belief in the unchangeableness of Yale has prevented the university from benefiting as much as it should by the initiative of its members. When one of them was seized with a new idea, saw an opportunity for the sudden expansion of his department into untrodden fields, his colleagues were inclined to look upon it as a personal fad which might be interesting in its way, but ought not to be allowed to interfere with the college. Yale has been kept so carefully pruned that its growth has been checked. The standing orders of the gardener seem to have been: —

> "Go thou, and like an executioner,
> Cut off the heads of too fast growing sprays
> That look too lofty for our commonwealth."

In this way Yale has been of great service to the country. We meet all through the United States Yale men who have found in other institutions the opportunity for the development of their powers and the expansion of their ideas. In reading over the history of the university I am astonished to see how many things Yale has started and let slip. The stones that her builders rejected have become the corner-stones of other institutions. Johns Hopkins University is built on a Yale idea, also the agricultural colleges, the short courses for farmers, the experiment stations, the technological schools, and the paleontological museums. Yale's chief rivals are her own offspring. I do not mean to undervalue Yale's present greatness, but it is difficult not to, because I involuntarily compare it with what Yale might have been.

Western universities run to the opposite extreme, to neophilism. If a professor conceives a new idea or a fraction of one, the others crowd in to congratulate him on it; at the next faculty meeting the curriculum is rearranged to accommodate it; the Legislature is asked for a new building to house it, and the president gets out an advertisement, disguised as a "departmental program," in which it is modestly alluded to as "perhaps the greatest educational advance of the twentieth century."

I have undertaken to leave out history in discussing these universities, but I must make an exception here in order to give one example of Yale's lost opportunities and to explain one of the anomalies in which she takes most pride, the Sheffield Scientific School. In the catalogue of 1847 occurs this item: —

> "Professors Silliman and Norton have opened a laboratory on the college grounds for the purpose of practical instruction in the applications of science to the arts and agriculture."

This is the event which President Gilman, of Johns Hopkins, called the beginning of true university work in

America. It was the first public recognition that the college accorded to an enterprise that had been carried on for five years at private expense. Norton was allowed to become Professor of Agricultural Chemistry on condition that he should draw no salary. It may be mentioned here that Willard Gibbs, the greatest scientific genius that America has produced, was permitted to work in Yale for some years under the same conditions.

The new scientific school was felt to be a disturbing element. It did not fit into the perfected plan of collegiate education. At first it was a graduate school of technology, and if this plan had been adhered to, Yale would have been sixty years ahead of Harvard, for this is the arrangement to which Harvard has now come. But Yale lost this chance of priority by shifting it to an undergraduate course.

Another chance was lost in not cordially receiving the new sciences into the college. Harvard had no advantage in point of time. In fact, the new departure has the same date in the rival colleges, for in 1847 Agassiz was appointed, and Horsford, a pupil of Liebig's, opened his chemical laboratory. But Harvard, under President Eliot, boldly staked her reputation on the elective system, untried and revolutionary as it was, and she won out. Yale admitted the sciences to equal competition with the traditional studies for entrance and graduation slowly, reluctantly, and incompletely. It is this half-hearted and inconsistent policy which has given some point to the Harvard gibe: "Yale was founded fifty years after Harvard, and has kept the same distance behind ever since."

Until 1860 the engineering school was lodged in the chapel attic. But then the fairy godmother came to the rescue of this neglected stepchild. The school gained a name and a fortune together, and three years later received a richer dower from the national government in the land grant fund. No institution deserved it more, for Professor

Porter's short course in agriculture had brought together at New Haven five hundred farmers for scientific instruction,[1] before Senator Morrill had secured the passage of the bill to which the agricultural colleges and experiment stations in every State owe their existence. But after thirty years this income was lost to Yale, and the College of Agriculture and the Mechanic Arts of Connécticut disappeared from New Haven. Yale alumni are numerous, rich, and influential. Nobody ever accused them of lack of loyalty. Nobody ever assumed that they were incompetent in politics. It would be absurd to suppose that they could not handle a little State like Connecticut when we see what a few young graduates can do with a Western legislature. I suspect that the Yale people as a whole did not care much what became of it, and were rather inclined to think the college was well rid of this entangling alliance with the State. I am confirmed in this suspicion by the fact that some of them think so yet. They seem to think that if this obstreperous department had not been cut off, Yale would have sunk to the level of Wisconsin or Cornell. Nevertheless, if the agricultural income had been retained, it would have now been the equivalent of a $2,000,000 endowment fund. And where Sheffield would be in numbers may be surmised by following out the curve in the direction it was going before the drop in 1894.

The fourth of what I call Yale's lost chances I discovered in a box of odd pamphlets on the history of the university. It was a most fascinating theory of education written by James D. Dana, entitled "The Yale University Scheme," and published in 1870. It provided

[1] As the seed from which so large a tree has grown, the original announcement is worth quoting from the catalogue of 1860: "It is intended to furnish a course of 80 or more Lectures on Agriculture and kindred subjects, to be delivered by gentlemen chiefly from abroad, in the large hall of this building [the new Sheffield] in February. The charge for the whole course will be $10."

for an academic college and a scientific college, equal and coordinate. Scientific courses were to be taught also in the Academic College, but in a different way from the Scientific College, for culture, not for specialization. In the Academic College no electives were "allowed in the departments of natural, chemical, and physical science, as these subjects are admitted to the college only so far as is necessary to give the breadth and depth to education which every graduate should have." Conversely, literary and historical subjects were put into the curriculum of the Scientific College "in order to give a thorough and well-rounded education," but not taught as to Academic students. Here is a consistent and logical plan, somewhat too rigid and artificial, doubtless, but based, it seems to me, on sounder pedagogy than President Eliot's theory that studies should be taught in the same way to all students, no matter what they want them for. My personal opinion is that if this policy had been adopted and developed, Yale would not only have been in advance of any other university of 1870, but in advance of any other of the present time, although some are now verging toward it. But Dana was hardly justified in calling it "The Yale University Scheme," for it was far from representing the actual structure of the university at that time. It was more an ideal, like the Cyropedia. And it is hopelessly lost in the present confusion of functions between the Sheffield Scientific School and the Academical Department. A student in the latter may be doing research work in analytical chemistry, and a student in the former may concentrate on history. An Academical student who devotes himself to philosophy gets the degree of Bachelor of Arts, although he may be perfectly artless, and a Sheffield student, confining himself strictly to the practical arts and deprived of the opportunity of philosophizing, gets the degree of Bachelor of Philosophy. French Phonetics is put down among the technological branches of Sheffield. This classi-

fication, though unconventional, seems to me to give it a much more suitable place than among the humanities, but then why is not Latin Paleography also moved over to Sheffield? The Academical Department can boast of the distinguished names of Gibbs, the physicist, and Dana, the geologist; which the Scientific School would find it hard to match. On the other hand, Whitney, the philologian, and Lounsbury, the English scholar, belong on the other side of the fence, being professors in the Scientific School.

I do not assert that the four ways I have mentioned by which Yale might have met the new technical sciences — putting them into a graduate school, admitting them freely to the college, supporting them by State and national funds, and forming them into an independent educational system — are the only ways, or the best; but it seems evident that if any one of the four had been consistently developed and persistently adhered to, Yale University would by now have gained in size, wealth, power, and prestige.

It is easy and altogether useless to pick out possible mistakes in the past and to assume that another course might have been better. My only object in this backward glance is to show the disadvantage resulting from a vacillating and half-hearted policy, because it seems to me that Yale is still suffering from this disadvantage. The very point in question is not settled. The relation of Sheffield to the College is still as anomalous and inconvenient as it ever was. And other examples can be taken from the present, for instance, the summer school.

President Harper, in starting the summer work at Chicago in 1894, showed the same boldness and determination as President Eliot in introducing the elective system at Harvard. He made it the full equivalent of the other quarters, with instructors of the highest standing and full university credit for the work done. It was an astonishing success from the start, and is one of the most profitable

features of the University of Chicago in every sense of the word. The work done in the summer is in general both more thorough and more advanced than that of the winter quarters, and the university has extended its influence all over the South and West by means of it. Other universities have imitated the plan more or less completely and with similar success. Yale's rivals on either hand, Harvard and Columbia, respectively, had 1349 and 1532 students in the summer school of 1908. Why, then, was Yale's summer school a failure? Various reasons are given, doubtless valid in some degree, such as the low salaries of Connecticut teachers, the exclusion of women from the regular undergraduate work, and the location of the university in a small city. The summer school was opened July 6, 1905, and ran for three seasons, in which the number of students were 269, 207, and 139. The expense to the university for the first two years was $2000 and $9000. In my opinion the fundamental cause of its failure was the half-hearted spirit in which it was undertaken. It was attached to, not incorporated in, the university. It was regarded by some of the Yale men as an unpromising, if not dangerous, innovation, and full university credits were refused to the summer students. This lack of confidence in the work creates a bad impression. I remember that a friend of mine, a professor in a small college, wrote for admission to a summer school conducted on this plan, but learning from the university authorities that no credit was given for work done in the summer courses, he wrote back that he supposed they knew the value of their courses better than he did, and, if that was what they thought of them, he did not want them at any price.

The summer school will doubtless come eventually at Yale, probably first in Sheffield through the gradual development of engineering, mining, and forestry work in vacation. But in the meantime Yale is losing the popu-

larity and influence that a large summer school would give.

I have taken too many illustrations of Yale's opportunities from the past. Let me take one from the future. Yale has just now got the lead in forestry, whether through the foresight of the administration or through individual initiative, it does not matter. The only important question is whether Yale will still be in the lead fifty years from now. That depends, it seems to me, on how Yale men, at New Haven and elsewhere, welcome the innovation. This is a crisis moment, when the whole continent of North America is aroused to the necessity of systematic forest preservation and cultivation. A learned profession, new to this country, is being created. New methods of training for it are to be worked out within the next few years, to provide men for the State, national, and international commissions and all other branches of the service. The agricultural colleges were early in the field and might have held it if they had been more enterprising and prophetic, but halfback Pinchot got through the line with the ball, and now is the time for snappy team play by the faculty and officials at Yale. Yale has got to make her ten yards now or lose it. Then it will be picked up by a Harvard man, or, still worse, go over to California, Michigan, Minnesota, or some other university quite outside the Eastern athletic association.

Yale has no reason to be downcast because other universities have got ahead of her in a few things, for no faculty is more fertile of original and progressive ideas, which, if taken up and developed, would make it the foremost university of America in many lines. I was at first puzzled why Yale men gave me so different an idea of the institution. Some were inclined to be pessimistic about its future; others were optimistic and full of enthusiasm. They were so far apart in their statements about life and work and aims that one would have supposed that they were talking

about different institutions, as indeed they were, for I discovered that some, when they said "Yale" meant "College," and others when they said "Yale" meant "University." The students and alumni seem to have more College spirit than University spirit, and possibly this affects the faculty.

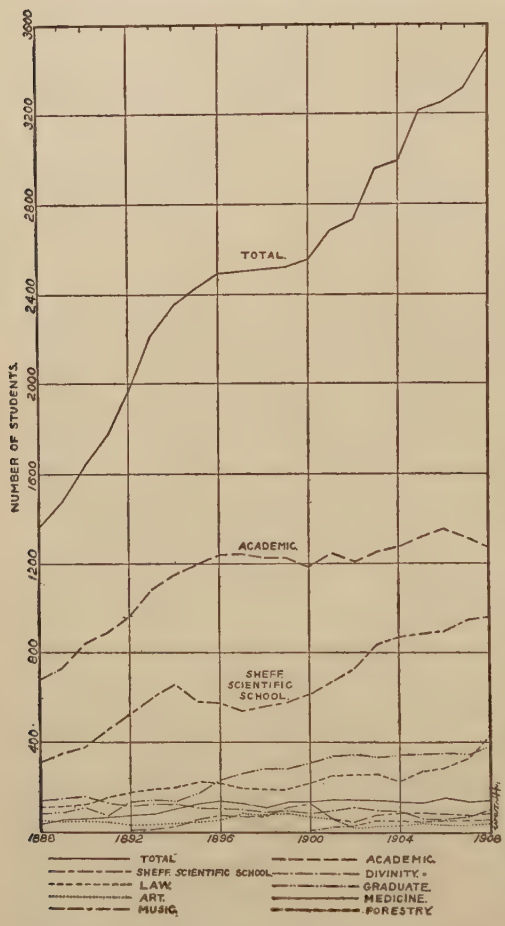
Columbia affords the most striking contrast to Yale in this respect, but I may mention some others. It was a professor of political economy at Minneapolis who took me over to the agricultural college a mile or two away and showed me ears of their latest pedigreed corn. When I was introduced to a cryptogamist in the University of California, the first thing he said was: "You should have been here to see one of our Greek or Sanskrit plays. But come with me this evening to the Greek Theater, anyway, and hear some music." This spirit is not confined to the State universities, although it is most noticeable there. At Harvard I found the same. The professor of physics did not show me his own laboratory, but instead took me through miles or more of subterranean passages in the basements of the zoölogical museum, and, diving into evil-smelling barrels, held up for my admiration the finny monsters of the brine. The botanist at Harvard took me to the stadium and to Radcliffe.

At Yale it was different. I was treated everywhere with as much courtesy and consideration as an itinerant journalist could expect, but it seemed to be regarded as bad form for a professor to show any marked interest in what was going on outside his own and allied departments. They are scrupulous in their adherence to the good old rule of "Mind your own business."

This state of things may be due to extreme specialization and absorption in individual research, as it is with certain men in every institution; but I fear that at Yale it indicates rather a lack of coördination and coöperation. That is, Yale University as a whole is lacking in the quality that has

made it eminent in athletics, team play. The professors might take a lesson in this from the students.

In talking with men in other universities, some of them Yale graduates, I heard repeatedly such expressions as these: "The atmosphere at New Haven is not conducive to research. Life there is too comfortable. The Graduates' Club is too pleasant. There is no pressure brought upon the instructors to force them to produce. They do not have the zeal and enthusiasm that men at Johns Hopkins, Chicago, and Harvard have for pure science, or the men at the State universities have for applied science. Yale supports fewer scholarly journals than other universities of its standing, and its faculty do not contribute so much to science as men of less ability and opportunity elsewhere."



THE NUMBER OF STUDENTS IN YALE UNIVERSITY FOR THE LAST TWENTY YEARS.

When I visited Yale I brought up this matter in several conversations and heard the other side of it, which, if I in-

terpret it fairly, is this: Scientific discoveries cannot be made to order. Scholarly researches of the highest grade must not be forced or hurried. They must be spontaneous. The impulse to creative activity must come from within the man. A large proportion of the research literature now being turned out so abundantly is trash, diffuse, inadequate, and undigested. It impedes rather than promotes science. Men in research institutions, experiment stations, and the graduate schools of some universities have to publish a certain amount of "original matter" every year, or they suffer in reputation, and perhaps jeopardize their positions. The best work is done by men who have secure positions, congenial surroundings, and abundant leisure. Under these circumstances, unharassed and unworried, the scholar can devote his spare time and energy for a series of years to the most difficult and important problems, instead of being driven, as many a man is, to take up an easy and trivial investigation because he is sure to "get results" from it in time for his next paper.

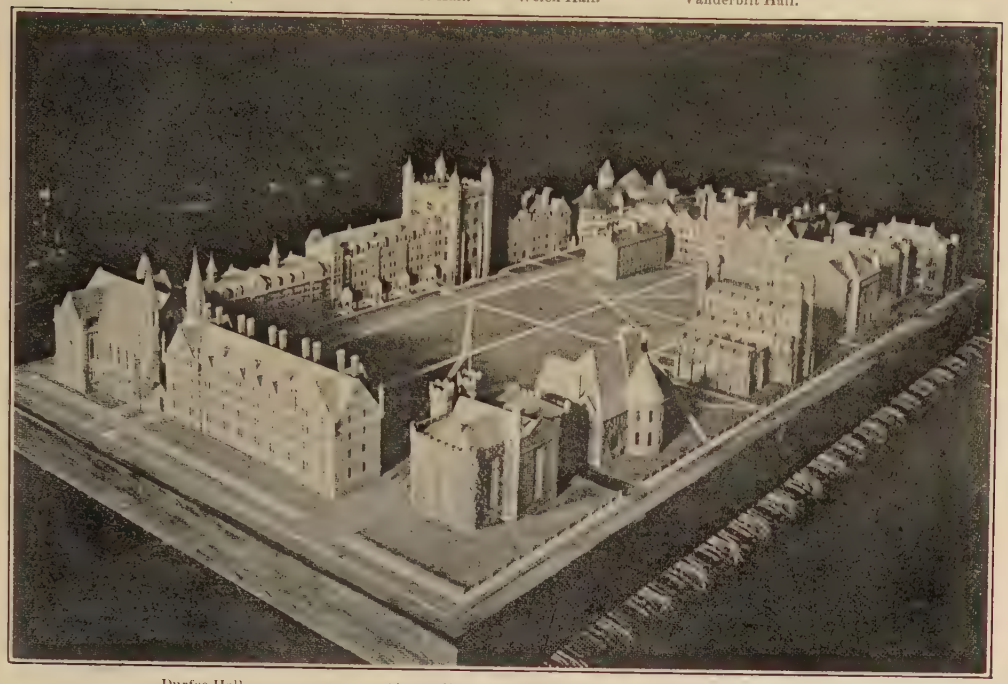
This is certainly an attractive theory. In how far the conditions prevailing at Yale correspond with this ideal can only be told by Yale men. In how far the contributions to knowledge emanating from Yale prove the validity of the theory and superiority of these conditions can only be told by their contemporaries elsewhere. I will here only call attention to the fact that this is not the way Yale goes at athletics, and in athletics the supremacy of Yale is less disputed than in productive scholarship. The Yale boys do not play football just when they feel like it and stop when they get tired. They are urged by other impulses than the pure joy of bodily activity. That is, the professional spirit prevails in Yale athletics, and the amateur spirit prevails in Yale scholarship. I would not be understood as using these two words in their offensive senses. I do not mean to imply that improper methods are employed in Yale athletics, or

that Yale scholarship is dilettante. I mean merely that the football men make it the supreme business to win the game, and will sacrifice themselves and almost everything else to it, while the Yale professors, or such of them as hold the theory I have given above, regard research as a by-product of their occupation, as a superior sort of recreation. Their first business is to teach.

This should be reversed, it seems to me. For in sport the process, not the end, is the important thing, while in science the end is the important thing, not the process. The ostensible aim of a game, the kicking of a pigskin over a pole, is entirely insignificant. It does not matter in the least which side does it, so long as the game is well played. But a scientific discovery is so important in itself that almost any means are justified in attaining it. It does not matter in comparison whether the scientist himself is comfortable in his life and happy in his work, or whether he is a laboratory drudge, prodded into productivity by an ambitious president. The only question is, how can the best results be obtained, and this, as I have said, I shall not attempt to answer. But as an educational experiment I should like to see Walter Camp put at the head of the Yale research work. Possibly he would infuse into it something of the "Yale spirit"; possibly then research work would be carried on

> "As it were almost 'foot-ball,' as it were even your play,
> Weighed and pondered and worshipped and practised day and day."

The question of whether the most and the best scientific investigation can be carried on by men primarily engaged in teaching or by men who devote themselves more or less exclusively to research work is coming to be of great importance on account of the establishment of independent institutions for the advancement of science, some of them with a revenue equal to that of a college. I have in mind



MODEL OF MAIN YALE COLLEGE CAMPUS.

Buildings not described are all dormitories.

particularly the Rockefeller Institute for Medical Research, the Carnegie Institution with its five or six research laboratories, the great museums and the government departments devoted to experimentation in physics, chemistry, geology, meteorology, botany, zoölogy, etc. Will these withdraw from our faculties the men with the genius for discovery, leaving in the colleges men who are only teachers? Will this increasing segregation produce a greater differentiation than at present prevails between productive and educative scholars?

I shall have to recur to this question later in the book, but I bring it up here because Yale stands authoritatively committed to the theory "that investigation must be associated with teaching if it is to produce its most effective results."[1] This derives some support in Yale's honor roll of productive scholars and great teachers of the past generation, and also in the fact that in the last few years, when increased emphasis has been laid on classroom duties at Yale, the scholarly output has also increased. The last chapter of this book, comparing these fourteen universities in many ways, brings out very clearly the eminence of Yale as a contributor to American civilization. The mere fact that 12 per cent of the members of the National Academy of Science are Yale professors and 18 per cent are Yale graduates shows the present standing of the university in scientific research.

The Linonian and Brothers Library stands on the campus as a monument to remind the present generation of the time when students took a more active part in their own education than they do now that they have so many other things to attend to. Fifty years ago these two undergraduate literary and debating societies had their own libraries, numbering 25,000 volumes, a close rival to the library of the college with its 33,000. In those days the *Yale Literary*

[1] President's Report, 1907, p. 4.

Magazine was more popular among the students than it is to-day. But Yale is fortunate in maintaining two literary magazines of good standing, the *Lit.* and the *Courant.* In the universities of the Middle West I found the purely literary periodicals mostly dead or dying. I was informed by a Yale undergraduate that "a great many fellows you would never suspect of it" were addicted to the reading of good literature on the sly, and I can readily believe it. The literary taste of the students, as given in the Senior questionnaire, is safe and sane, although academic. The "Elegy in a Country Churchyard" and "Crossing the Bar" run neck and neck for the post of "favorite poem," and the "Ballad of Reading Gaol" is not in the race. The teaching of Professor Phelps differs from what is commonly found in English classrooms in that many of his students like poetry even after they have studied it. He started a course in the modern novel a few years ago that might have had a similar effect upon their taste in fiction, but the course threatened to become popular, so he was shut off. The "balance of power" is as important in Yale University as in Europe.

The students in all other branches of the university are reputed to be more industrious than in the College, that is, the Academical Department. The Sheffield students generally do about as much work in their three years as the College students do in their four. But the classwork in the College has been greatly improved of late in many ways. The students are separated into smaller groups for drill. Stricter attendance on classes is required. An honor or advanced division is made in December and March of students who have attained high standing in the preceding term. To prevent the election of easy and scattered studies the "A B C system" has been established.[1] Most of the elementary courses are classified as A; those of intermediate

[1] For an account of this system and its workings see President's Report, 1908, pp. 73–77.

grade as B; the C courses are more advanced, and the D courses are the most difficult of the studies ordinarily opened to undergraduates. These letters indicate the sequence of the courses, and students are restricted in the number of A courses they may take at one time. There is also a greater amount of personal intercourse at Yale between the students and professors than there used to be. President Hadley sets a good example to his faculty in this. He is much more approachable than President Eliot.

I find in university circles a general dissatisfaction with the prevailing methods of choosing new members of the faculty. Since there is nothing more important than this selection, I think attention should be called to the custom of Yale. When there is a chair to be filled, the choice is not left to the president or to the head of the department alone, but a committee of the faculty is appointed to find the right man. This committee ordinarily consists of two members of the department concerned, one from an allied department and two from two other distinct departments of the college. The last two are presumably not qualified to pass upon the special attainments of a candidate, but judge him more by his general reputation, personality, and teaching ability. There are some obvious merits in this method, and I have heard of only one objection to it — and this will not be regarded by all as very objectionable — that it is more likely to get men who will be agreeable and harmonious additions to the faculty circle than men of marked originality and enterprise, who are sometimes very hard to get along with.

The university extension work in New Haven, which was started in 1905, was dropped in 1908, but the evening technical classes for mechanics by the Sheffield Scientific School are continued. There is a great opportunity in this line if Yale cares to take it. The University of Wisconsin is starting work in shops and factories on an extensive scale,

and it is likely to be as beneficial to the community and as profitable to the university as its work in agriculture. Connecticut offers a better field for this novel form of university extension than Wisconsin. The welcome given by the public to the opening of the Peabody Museum and Art Gallery on Sunday afternoon, and the success of the concert work of the Music School ought to encourage the university to adopt an open-door policy.

President Hadley occupies a position like that of Francis Joseph, Emperor-King of Austria-Hungary. Yale is a dual monarchy; the person of the sovereign being the bond between the College and Sheffield. Like their European analogues, the Magyars of the Scientific School have of late been getting punctilious about their autonomy, and inclined to question the incidence of taxation for imperial expenditures. There was a time when the scientific men would have been glad to be admitted to the College on equal terms, but that time is past. I do not know that the Academical faculty and alumni are any more disposed than they used to be to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare, and secure the blessings of liberty, but if they are they would find the Sheffield faculty and alumni more reluctant. The latter would in fact regard such a proposition in much the same way as the Massachusetts Institute of Technology did the proposed merger with Harvard, as checking their normal development, loading them with alien traditions, and spoiling the industrious and practical spirit of their students. In numbers Sheffield is likely to pass the Academical Department if it continues to grow at the present rate. But it is not likely to continue at the present rate. It is likely to grow much faster if it has a fair chance, partly because of the drift toward technological education, partly because raising the standard from three years to five will keep students there longer.

This step is inevitable in the near future if the reputation of the school is to be maintained. The theory of the Yale authorities has been that if a man were going into an industrial occupation he should take a three years' course in general science as a foundation, and then go directly into the shop or field, where alone he could get practical training. Then he could return to the university and obtain his engineer's degree largely on his professional practice. As a matter of fact, few did so. The average number of M.E.'s and C.E's conferred each year in the last twenty has been less than two. But other institutions have demonstrated that thorough and practical training can be given in the technical school even better than in the industries, and that it pays, even in the narrowest sense of the word, to spend five years at it. The technological courses in Harvard now require seven years' work, and surely five is not too high for Yale. It seems to me that all the courses in the Sheffield Scientific School should be definitely and emphatically outlined as five-year courses. Then, if desired, a footnote could be put in, stating that at the end of three years' work anybody who wanted it could get the degree of Ph.B. or something of the sort, just as an encouragement to persevere.

Another impediment to the Scientific School is the requirement of Latin for admission, in which respect it differs not only from other technological schools, but from most colleges. For example, a graduate of Harvard College of Arts and Sciences might not be admitted to the Freshman class of the Sheffield Scientific School. A student entering Sheffield does not continue his Latin; in fact, he cannot. It is therefore not required as a specific preparatory study, so the only theory on which the requirement is justifiable is that it is impossible to get the necessary cultural foundation except through the Latin language. The applicant may have received otherwise the broadest possible education. He may be able to read Greek and even Latin with

the fluency of an alumnus of Yale College, but if he has not read the first two books of Cæsar he cannot become a mining engineer or electrician in Yale.[1]

The work in Sheffield is practically all prescribed, but students at entrance choose between two groups for the first year and then elect one of the thirteen courses offered as follows: —

The Engineering Science Group, preparatory to the courses in
- Civil Engineering
- Mechanical Engineering
- Municipal and Sanitary Engineering
- Electrical Engineering
- Engineering preparatory to Mining
- Mathematics, Pure and Applied.

The Natural Science Group, preparatory to the courses in
- Chemistry preparatory to Metallurgy
- Biology preparatory to Medical Studies
- Zoölogy and Botany
- Mineralogy and other Studies preparatory to Geology
- Selected Studies in Language, Literature, History, and the Natural and Social Sciences
- Studies preparatory to the Study of Forestry.

There are many progressive and interesting features in this work which I should like to describe, but I have only space to mention five: first, the development of biological research, which has hitherto been Yale's weakest point; second, the increase in the number of joint classes and similar coöperation between the various schools, thus saving the expense of duplicated instruction and strengthening the feeling of unity; third, the practical training in mining and metallurgy for which the new Hammond Laboratory provides good opportunity; fourth, the investigations under Professor Chittenden on the borderland of the sciences of chemistry and physiology; and, fifth, the select course. This last is a movement that educators would do well to watch, for it promises to be of great importance. It is an

[1] Catalogue, 1908–1909, p. 222.

attempt to break away from the bonds of collegiate traditionalism and provide the sort of liberal education that, in the language of the catalogue, —

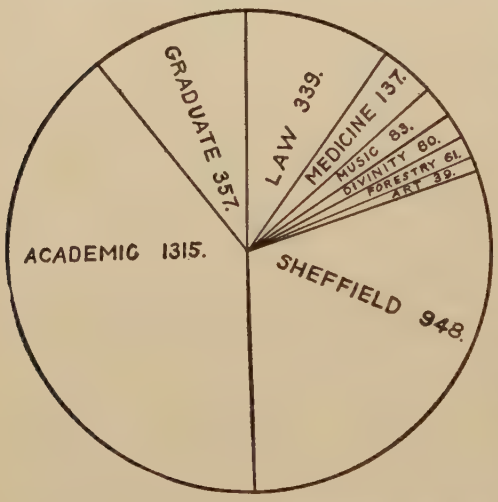
"is adapted to the needs of men who expect to engage in business, manufacturing, and banking, to enter professions like law and journalism, or to seek administrative positions in corporations or the public service."

The select course comprises in literary studies, English, German, and French (or Spanish); in scientific studies, mathematics, physics, chemistry, biology, organic evolution, physical and commercial geography, and public hygiene; and in social studies, history, government, economics, anthropology, social evolution, business administration, and commercial ethics. A new building, the beautiful Leet Oliver Memorial, has been provided especially for this course. It seems to me that here is an opportunity to do something that no other university is yet doing well, and no other university can do so well as Yale. I mean, provide a suitable education for the destitute classes, the unorganized professions mentioned in the quotation from the catalogue. To accomplish this, the select course should be made more elastic in its entrance requirements, extended to four or five years with a jumping-off place for other professions at the end of the second or third, and arranged to provide freer election, though keeping most of the work in carefully correlated groups.

The erection of the Sloane physical laboratory at a cost of $425,000 marks the beginning of a new era of expansion. It is the first university laboratory, and Academic, Scientific, and Graduate students will be here brought together. A laboratory for zoölogy, also to be used in common, is to be erected in the near future. These and other new buildings are to be placed on the Hillhouse property recently acquired by the university through a gift by Mrs. Sage of $650,000. This is some twelve minutes' walk from the old campus,

and a number of the Yale alumni protested vehemently against the extension of the university in this direction. They are opposed to anything tending to the disintegration of the college, even though it might promote the unification of the university.

My object in discussing these fourteen universities in a comparative way in these articles is to bring out the distinctive features, especially the peculiar excellences, of each, but I do not mean to imply that these should be adopted by the others. On the contrary, I think our American universities are coming to be altogether too much alike. They are really not so much alike as their catalogues; but there ought to be a greater diversity, originality, and specialization. Since there are nearly a thousand institutions in the United States calling themselves colleges and universities, one might expect to find among them examples of all kinds of educational processes. But as a matter of fact there are only three or four different types, and these are not very distinct or consistent. Educators are ready enough to advocate the most extreme and revolutionary theories in private conversation or faculty debates, but when they get into positions of responsibility, they compromise and imitate, either because they lack confidence in their ideas or because their colleagues and supporters do.



DISTRIBUTION OF YALE STUDENTS, 1907–1908.

Now that traveling is cheap and easy, the time has come for a greater differentiation, especially in professional, technological, and graduate work where the increasing opportunities and demands of the age are not yet adequately met anywhere. Each of these fourteen great universities ought to have at least one department in which its preeminence is so manifest as to be acknowledged by all its rivals. Then it may devote itself to bringing up the other departments to the same standard. Each university should determine on the kind of education which it can best give on account of its history, environment, equipment, and personnel, and should cultivate that in preference.

I make this explanation in order to induce the reader to take a lenient view of my presumption in suggesting for each university what I regard as its most profitable line of development.

My interest in Yale lies in that it has maintained to an unusual degree the classical training; it has developed a vigorous scientific school; it has between these departments a group of new studies, belonging strictly to neither, the modern social, political, and administrative sciences; it has schools of art, music, law, medicine, and divinity; it has the tradition and reputation of public service and political success; it has the evangelical spirit. Now all these assets, tangible and intangible, can be combined without conflicting on just one thing, the development of the type of man that, in my opinion, the world most needs now, the cultured citizen in command of scientific methods.

The moral failing of humanism is its tendency to become selfish. Self-culture comes to be regarded as the ultimate aim. We need an education, it seems to me, which shall transform the humanist into the humanitarian without losing in the change any of his former virtues. Humanism is likely to be self-centered, aristocratic, and quietistic. Humanitarianism is altruistic, democratic, and dynamic.

In the first place, there is at Yale the religious atmosphere. This is a reality that has to be reckoned with even by those who would repudiate it. The influence of two hundred years of devout learning and Christian aspiration cannot be shaken off at once. There is a kind of karma carried over from one college generation to the next which molds it in the likeness of its predecessors. It makes the students in all old universities do silly things that they would not think of doing by themselves. They are often as much puzzled as their parents are to account for their being caught in some act of rowdyism quite foreign to their natural instincts. It is the rowdy spirit of their collegiate ancestors working in them. But karma transmits good impulses as well as evil, fortunately for Yale, where karma is strong. This is why all the boys of Yale College turn out to chapel at 8 : 10 every morning. It is not because they are individually more devout or less sleepy than other college boys. It is not because the faculty insists upon it, for the faculty is not unanimously or very strongly in favor of it. But each successive Senior class votes by a large majority for the continuance of compulsory daily chapel and Sunday church attendance. They proffer no reason for it, though if pressed they will obligingly invent one or more, obviously inadequate, such as "it makes us get up early," "it begins the day right," or "it gives a feeling of solidarity."

Each class elects its four class deacons of the college church, and the office is in good repute. In no other university that I have visited does the Y. M. C. A. stand so high in the student body or exert so much influence in social and political affairs. There are students who sneer at the "Dwight Hall ring," but they do not despise or ignore it. A capable religious leader is almost as likely to be elected to one of the Senior societies as an athletic leader. There is doubtless some ground for the charge that Christian activities have in certain cases been taken up as a means of

political advancement. This more than anything illustrates the striking difference between Yale and most other universities in the student estimation of religious work.

But though the religious impulse is still powerful, it takes a new form here as elsewhere. The fondness for theological disputation has died out, and the taste for devotional exercises of the prayer-meeting type has declined. Preaching and evangelistic work no longer attract as formerly. The old zeal seeks new channels in practical altruism, such as settlement work, organized charity, philanthropic institutions, civic improvement, and the advocacy of more or less radical social reforms. These are gaining in efficiency through the increased utilization of the methods of modern science.

The practical Christian spirit, in taking the form of systematic social betterment, becomes, in accordance with present tendencies, somewhat political, and therefore falls in line with another of Yale's characteristics, the tradition of public service in nation and State. This is one of the strongest and best of the intangible assets of the university, having a double value because it encourages the Yale graduate and disheartens his opponents. When the men with Y on their sweaters run on to the field, the game is half won. The argument in favor of the truth of the legend of Yale's team play in politics would have as its major premise a list of dignitaries too long for publication in these pages, including, for example, twenty of the fifty-nine governors of Connecticut; and for its minor premise the improbability that such a general recognition of individual excellence by the public was purely spontaneous. There are 15,428 living Yale graduates, probably more closely bound together by common training, a feeling of loyalty toward their Alma Mater, and mutual acquaintance, than any other large body of alumni in America, and inevitably exerting a powerful influence over public affairs. Yale men have the very useful

reputation for "getting there." A distinguished alumnus of Harvard, when asked why he sent his son to Yale, replied: "I used to think that Harvard gave the better training, but at my time of life I find that all the Harvard men are working for Yale men."

The Yale student is by his environment drawn naturally toward the opportunities of public life, but in order to prevent this from degenerating into mere office-seeking it needs to be closely allied to the altruistic movement of which I have spoken. The college should also recognize the legitimacy of the profession of publicist, and provide more specific training for it. Yale ought to have the strongest department of history and social sciences in the country, but it has not. Its students ought to excel in public speaking and debating, but they do not. Of eighteen debates with Harvard, Yale has won four. The faculty is blamed for it because more training is not provided, but this is not the reason, although the complaint may be justified. The reason is that student enthusiasm is not directed into this channel. The students do not wait for the faculty to coach them in rowing, singing, or dramatics. I attended a Yale-Harvard debate held in Woolsey Hall. There was a very tepid audience, mostly women and townspeople. Harvard won, but nobody seemed to care. It called to my mind the last contest of the kind I had attended in the University of Kansas, when we chartered a train, somewhat informally, packed it to the bell rope with students, and invaded Topeka. The representatives of the colleges spoke in the State capitol, where some of them have spoken since, and then we celebrated our victory by a big bonfire on Commonwealth Avenue, and when a policeman remonstrated, we made him dance a solo to the tune of college songs. All together, it was a very reprehensible proceeding, as the papers remarked at the time, but I think if it were averaged up with that Yale-Harvard debate, the happy medium

would be struck. How the Eastern college men used to make fun of us in those days because we expended our enthusiasm over oratorical contests instead of football! Oratory, they said, is a primitive art, out of place in a civilized community, as antiquated a weapon as the bow and arrows. The gentleman and scholar is distinguished on the platform by his air of embarrassment, by the way he hesitates and mumbles his words. They may have been right, but I notice that many of the younger Western politicians who have forced a recognition from the reluctant East have been trained in these despised oratorical contests, and their success has been largely due to this training; such men as Bryan, of Nebraska; La Follette, of Wisconsin; Beveridge, of Indiana; Finley, of New York; Hadley, of Missouri, and others whom I might name if I had time to look them up. The spoken word has not yet lost its power, if it be fitly spoken.

The official explanation of the essential difference between Sheffield and the College is that the former contains students who have decided upon their profession, and wish to enter immediately upon preparation for it, and the latter students who have not decided upon their profession, or wish to postpone their professional training. This classification fails to recognize the fact that a large proportion of the men in the College have already chosen their life work, but the university fails to provide them with specific training for it. That is, the College contains the unorganized professions. Let me take the class of 1896 as an example. At the end of its first decade its 238 members were distributed as follows: Law, 32 per cent; business administration (finance, commerce, and manufacturing), 30 per cent; education, 18 per cent; medicine, 6 per cent; ministry, 4 per cent; literature (including, for convenience, journalism), 2 per cent; the rest scattering. To show the changes that are taking place in the distribution of occupation, let us compare with the

above the triennial report of the class of 1905: business administration, 40 per cent; law, 19 per cent; education, 13 per cent; technical industries (engineering, forestry, farming), 10 per cent; ministry, 3 per cent; medicine, 3 per cent; literature, 2 per cent.[1]

Now of these, law covers a multitude of occupations for which the ordinary legal course is not a perfectly adapted preparation. It is a makeshift, because nothing better is provided for them. For of specific education of the group of business men, Yale does nothing in a definite, systematic way. Harvard has started a Graduate School of Business Administration. Pennsylvania has the undergraduate Wharton School of Finance. Most of the other universities are adding similar courses. Yale will have to come to it some day, because the proportion of men needing such training is increasing, and it is being demonstrated that it can be made effective. For education and for literature as professions Yale also fails to provide specific courses.[2] That is, over half the men then in the College did not have the opportunity to get professional training, although probably many of them would have preferred it. This is what some call "saving the College," not giving the students a chance to do anything else. Whether it saves the College or not remains to be seen. At present the College is declining and the professional schools gaining.

It would be well to have these undiscovered professions of public and private administration developed at Yale,

[1] It is interesting also to compare the occupational statistics for the earlier part of Yale's history as given in the *Alumni Weekly*, June, 1907. The Yale graduates of the period 1701–1791 were distributed as follows: ministry, 36 per cent; law, 17 per cent; medicine, 11 per cent; business, 13 per cent; education, 3 per cent. That is, 64 per cent of the graduates of the eighteenth century were in the three traditional learned professions.

[2] A beginning has since been made in the establishment of a chair in the History and Principles of Education to which has been called Ernest Moore, Superintendent of Schools, Los Angeles, California.

because there they would be kept from being narrow by the tradition of culture and from being selfish by the tradition of service. President Hadley, as one of the foremost authorities on commerce, is eminently fitted to lead in a movement which shall provide both the cultural and the professional education demanded by the conditions of modern life.

It happens that Yale has also a group of men who are opening out a new field of research of great promise. Professor Chittenden is raising dietetics from an observational to an experimental science. The dietary standards of Voit and Atwater were essentially averages, based upon the implicit assumption that the general practice of mankind was the optimum. They showed how much men did eat. Chittenden shows how little men need eat, and whether his theory of the benefits of a diet low in proteids is confirmed or not, his results are of value. Professor Fisher, a mathematician turned sociologist, is also bringing scientific methods to bear on vital human problems, and is developing a national health movement through the Committee of One Hundred.

I regard these tendencies as important because they seem to be bringing to the social sciences what they have sorely needed, the methods and discipline of the exact sciences. If there is anything in the idea I have suggested above, that an anthropocentric scientific education may be developed, having great utility as well as a unique cultural value, it will naturally be done by those who occupy the middle ground and hold the balance of power between the warring wings of the faculty, the classicists and the scientists. This field is now filled with a group of chaotic studies with ill-defined boundary lines. Their names are scattered along the alphabet from Anthropology to Sociology, and they are not yet prepared to become the main trunk of a system of education, for they do not afford the mental training of

either the classics or the sciences. But this may be done, and I have indicated some of the reasons why I think Yale could do it.

Yale was the first university to incorporate schools of the fine arts and of music, and though small they have made good records. Most of the students are not candidates for a degree, but one or two B.F.A.'s and B.M.'s are given every year to students who have taken the required literary and other college work, and also presented an original composition of an approved character. Yale has an art collection unequaled by any other university, the Jarves Gallery of 122 Italian paintings dating from the eleventh to the seventeenth century, and the Trumbull Gallery of 54 historical portraits and other works. The work of the Art School might be advantageously extended into architecture and the applied arts, by which it would be brought into close alliance with certain departments of Sheffield. I was disappointed in finding that the art and music schools do not influence the life of the whole university as much as I had expected, for this is authoritatively announced as their main function.[1] But the students I talked with knew and cared little about them, and the undergraduate artistic and musical activities, which are considerable, seem to have developed quite independently of the departments that would naturally be supposed to foster them.

The music, art, and graduate departments are the only ones at Yale which admit women. In music, as regular students, there are this year 57 women and 38 men; in the fine arts 26 women and 21 men. In the Graduate School about one tenth are women — 34 this year. They are well treated by the professors and respectfully ignored by the students, which is all they have a right to demand. They are admitted to work for Ph.D., but not for M.A., lest in the latter case some of the undergraduate classes be con-

[1] President's Report, 1907, p. 7.



Yale University.

CONNECTICUT HALL (OLD SOUTH MIDDLE).

taminated by their presence. The university is anxious to provide dormitories, dining halls, etc., for all its men students, but the women students are left to look after themselves. This is a good plan, for it tends to promote independence and self-reliance, in which the sex is apt to be deficient.

The Law and Medical schools have not had an equal share in the general reputation of Yale University. Even the graduates of the College, in spite of their loyalty to Yale, have in many cases preferred to go to Harvard and Columbia for their professional work. Now, however, the standards of both are being raised by the requirement of at least two years of collegiate work for admission, on the plan of the combined course which has been practically adopted everywhere except at Harvard in the last few years.

The Law School has gained 95 students, or 28 per cent, in 1908–1909. This remarkable increase is doubtless due in part to the growing reputation of the school and in part to the prospective raising of the admission requirement. Probably, also, the financial stringency had something to do with it here as elsewhere. During hard times in the East the professional schools gain at the expense of the colleges. In the West under such circumstances both high schools and universities grow, because jobs are scarce and education is about the only thing that is free. The Medical School is hampered by its old and inconvenient buildings and by not being in a large city. The latter objection may not be insuperable. The University of Michigan has built up a very popular medical school in a still smaller place than New Haven, and the University of Wisconsin is attempting to do the same. The rapid transit facilities are making New Haven a suburb of New York City, as the students of Yale without Saturday classes have found out.

A stranger who tries to see Yale will be disappointed, be-

cause so much of it and the best of it is invisible. I felt on the campus as I do in the dynamo room of a great power house. I knew that I was in the presence of forces obviously powerful but imperceptible to my senses. There is not enough tangible machinery about Yale to account for the work it is doing. The Yale undergraduates seem to train, control, and discipline themselves, leaving little for the official authorities to do in this way. In fact President Hadley has explicitly recognized this in saying that "if the chairman of the *Yale News* Board is a man of the right type, — and he almost always is, — he is the most efficient disciplinary officer of the university."

However strained the relations between the officers of the university and the student body might become, the *News* would never attack the president so bitterly as has the Harvard *Crimson* President Eliot or the Stanford *Sequoia* President Jordan. The *Record* never prints malicious jokes on the professors, as do so many "college comics." The Yale men who have patiently endeavored to explain to me the influences which mold the undergraduate into the Yale type have laid great stress on the common dormitory life and the effect of the senior societies. There are three secret societies, Skull and Bones, Scroll and Keys, and Wolf's Head, and it is the ambition of every normal College man to get into one of them. Toward this all his efforts are directed from his Freshman year, and Tap Day marks for him the success or failure of his college career. As one graduate said to me: "I would willingly have sacrificed a year of my life, if it had been necessary, in order to make Bones."

Since the ideals of the senior societies set the standard for the college, it is important to know what are regarded as the qualifications for selection. In so far as I have been able to ascertain them from talking with Yale alumni these qualifications may be formulated as two, one passive and

one active: first, conformity; second, achievement. The first requirement of eligibility is that the student "be a gentleman" according to the prevailing definition of that word; that he be clubbable; that he conform to Yale customs and violate none of its traditions. The second distinguishes the few men of prominence from the crowd of those who are merely negatively eligible through conformity with established ideals of manners and conduct. A man must have done something, particularly something that has brought glory upon the college; he must be a leader among his mates in college activities, such as athletics, journalism, college politics, or religious work.

These criteria are on the whole good ones, at least very similar to those that measure a man's success in the outside world, but some questions would arise as to their interpretation. Youth is naturally intolerant and exclusive, even, or perhaps especially, college youth, and probably too rigid a conformity is insisted upon and too narrow a definition given to the word "gentleman." Then, too, the activities in which prominence is rewarded are rather apart from the purposes for which the university exists, and devotion to some of these activities may easily become so absorbing as to give rise to a general sentiment that high grades are indicative of a narrow mind. The societies should in my opinion add scholarship to their list of undergraduate activities in which a student may legitimately attain distinction, and should take cognizance of the fact that a man who presents an original thesis, who discovers a new species of plant, or writes a genuine poem may be said in a sense to have brought glory upon his university as well as a man who has won a game.

That scholarship has very little weight in the question of eligibility to the senior societies was shown by Mr. Maurice F. Parmelee in the Yale *Courant* of December, 1906, from which I obtain the following figures: —

TABLE OF GRADUATES FROM ACADEMIC DEPARTMENT, 1882–1905

		HONOR MEN	%
Wolf's Head	308	19	6.1
Scroll and Keys . . .	349	37	10.6
Skull and Bones . . .	358	83	23.1
Total of Society Men . .	1015	139	13.6
Nonsociety Men . . .	3984	967	24.2
Total	4999	1106	22.6

The "Honor Men" are those that have received the highest marks in their classes and are, according to tradition, placed upon the commencement program for Philosophical Orations, High Orations, and Orations, although these are not now given. These men also become members of the Phi Beta Kappa, a national nonsecret honorary society. The figures show that only one of the three secret senior societies contains a higher percentage of Honor Men than the college as a whole, and even that society had a less percentage than the student body outside. That is, if a blindfolded man had entered the crowd assembled around the oak tree near Battell Chapel on the third Thursday in May and tapped forty-five men at random, the chances are that he would have obtained men of higher standing than those actually chosen, after the long and anxious deliberations of the secret conclaves. Or, in other words, after the forty-five happy men had gone to their rooms there was better picking in the crowd than there was before, so far as scholarship goes.

But the faculty estimate of a man's ability based on grades alone is as narrow in its way as the student estimate based on activities which often interfere with the making of high grades. To get some light on this point, I asked seven Yale graduates in classes from 1872 to 1896 to mark in the directory of graduates the names of their classmates

who had in some way distinguished themselves since graduation. No instructions were given as to the degree of prominence or the proportion of the class to be indicated, but they checked on an average 24 per cent of the names on their class rolls. On comparing these with the lists of living graduates in these classes who are members of the three senior societies and of Phi Beta Kappa (the latter being Honor Men), the following results were obtained: —

38 per cent of the Phi Beta Kappa men became prominent.
37 per cent of the Society men became prominent.
19 per cent of the men not in Phi Beta Kappa became prominent.
18 per cent of the men not in the societies became prominent.

Of course the question of which men in these classes had shown special ability depended upon the personal judgment of the men marking the lists and their knowledge of their classmates, and the examination was not extensive enough to give accurate figures.[1] No allowance can be made for the fact that the honors conferred upon an undergraduate give him thereafter a certain prominence in the eyes of his classmates, and may directly contribute to his success in life. Still we should probably be justified in concluding that the senior societies and the Phi Beta Kappa, though their standards of judgment are different, are equally successful in picking out the men of superior ability, and that a student belonging to either of these groups has twice the chance of future prominence as one belonging to neither. There are several interpretations that might be given to these figures. One is that the importance attached to non-scholastic activities in Yale draws a large proportion of the ablest students away from their university duties.

Most conspicuous of the activities is, of course, athletics, which at Yale, as in all the other American colleges, absorbs too much of the student's time, energy, and enthusiasm.

[1] But two men marking the same class gave practically the same figures.

By athletics I do not mean physical exercise or even sport, for these two desirable elements of student life have been so overshadowed by other features of the intercollegiate contest system as to be negligible in the consideration of the question. Young men get excited enough over their games naturally without outside encouragement, and when they know that in every city of the United States crowds are assembled to watch and bet on their feats, the pressure is too great. Overstrain, physical and moral, necessarily results, as in the boat race of 1908, when, with a President rooting on one side and a future President on the other, a Yale student collapsed and has since died and two Harvard men broke the rules of the university and were expelled.

I find that I am expected to say something about democracy in this article on Yale. I will therefore take this opportunity of explaining that I have not been able to find out much about democracy in American universities because it means different things or takes different forms in the different institutions I have visited. In Yale, for example, the students resent the introduction of valets and automobiles as a menace to democracy. In Princeton the authorities regard the use of Greek letters in the name of a club as too dangerous to be tolerated. In Wisconsin it is thought democracy will be lost if the tickets to the Junior Prom are raised from $3 to $5. In Michigan any system of marking grades except "passed" and "not passed" is considered undemocratic, and it was not until lately that that aristocratic institution, the Phi Beta Kappa, was allowed to be established. In Harvard the word "democracy" seems to mean "promiscuity" or else some spiritual condition altogether unaffected by external circumstances. When I started out on my quizzing tour, I had at the head of the list of questions which I proposed to ask, in one form or another, "Does the spirit of democracy prevail in this university?" But I soon dropped that question as unnecessary and fruitless,

because it was answered everywhere before I asked it, and always in the same way. There were two things about which faculty, students, and alumni of each university visited agreed, that is, on the purity of their democracy and the beauty of their campus. In admitting deficiencies in other respects they were usually frank enough and on some points even effusive, but on these two they would acknowledge no superiors. Therefore as the net result of a hundred conversations bearing on this subject I have left in my memory a hazy composite something like this: "There are other universities that are richer or older than ours; some that have at present more students. Our president is not all that he should be. The trustees do not always do the right thing. The faculty might be improved by process of elimination and substitution. But nowhere will you find a prettier campus or a more democratic body of students." On the former point I was able to use my own eyes, and shall take the liberty of expressing my personal opinions, but on the latter I was obliged to rely on hearsay evidence. Having just given this evidence, I shall dismiss the subject with the remark that in view of alarmist reports about the growth of luxury, narrowness, and class distinction, it is distinctly encouraging to find that the democratic spirit is still regarded as a desirable thing to have in a university, even though there may be a disposition to assume that it is already attained.

I have observed a curious difference between Eastern and Western colleges in regard to the influence of the alumni. In the West the alumni are always urging forward their Alma Mater into untried paths. Sometimes a State Alumni Association will take things into its own hands and, overruling president, trustees, and faculty, will, by control of the legislature, force the university to take steps which it believes are necessary to bring it closer into touch with modern life. In the East, on the contrary, the alumni seem

to be, as a whole, a conservative, even a reactionary, influence, opposing almost any change, wise or unwise. I have asked many persons the reason of this, and though they generally have agreed that it is so, they have not given any explanation which, in my opinion, satisfactorily accounts for it. The most plausible of the explanations suggested to me is that the Eastern alumni are older on the average. But are not the freshly graduated about as reluctant to have their Alma Mater changed as the older men? Whatever the cause, it raises the question whether the present movement to give the alumni a larger representation on the governing boards of State universities may not ultimately result in impeding rather than accelerating these institutions.

Eastern alumni are generous in the matter of financial support, and certain individuals initiate important changes through specific gifts, but as a body they are inclined to regard their Alma Mater as a relic of happy schooldays and as such to keep it intact and unaltered, so that when they return they may find it as they remembered it. In 1888 over two thousand of the Yale alumni signed a petition to the corporation remonstrating against the removal of an old fence that was in the way of one of the new buildings, and what is worse, they celebrated twenty years later the anniversary of "the fight that failed." It is the alumni, I believe, who are responsible for the preservation of Old South Middle, which makes Yale look like a full-grown rooster with a bit of the shell from which it was hatched stuck on its back. In important matters it is the same. If it were proposed to cut down the college course to three years or to raise the Sheffield course to four; to make the Sheffield boys go to chapel or to release the college boys from going; to abolish the senior societies or to have more of them,—probably the majority of the alumni would oppose the change regardless of its advantages or disadvantages.

I presume that Secretary Stokes, although I have never heard him say so, is more often called upon in local alumni associations to explain why some things have been changed than why more have not been changed.

The finest thing about Yale is the student body. I do not think this is true of all the universities in this country. In some laboratories and libraries I have visited the students appeared out of place, unworthy of their beautiful buildings. In some class rooms I have pitied the instructors because they were expending so much good teaching on such poor material. But I did not pity the instructors in Yale. If they could not do something worth while with the earnest, energetic, wide-awake, well-ordered young men in the seats before them, they could not anywhere. The Yale students as a rule are not *blasé*, cynical, and prematurely aged, nor on the other hand are they awkward, unruly, and obstreperous. They are not so studious and diligent as the average run of students in the State and city universities, but they come from more cultured homes and with more thorough preparation. After seeing the Yale boys in mass, I have come to think that the university gets more credit than it deserves for the achievements of its graduates. This educational machinery that we talk so much about is, after all, of minor importance. The product of the mill depends mostly on what kind of grain is poured into the hopper.

I liked the way a man would stroll across the campus in the evening, bare-headed and hand-pocketed, and call, "Oh, Billy Rogers!" to a four-story building, then hold a confidential conversation with the student who stuck his head out of one of the upper windows. I like the way they played diabolo and tops. I liked the way they heeled for the *News*. I liked the way they sang. All together they are a likeable lot of fellows.

THE NUMBER OF STUDENTS IN THE DIFFERENT DEPARTMENTS OF YALE UNIVERSITY FOR THE LAST TWENTY YEARS

Years	Academic	Sheff.	Graduate	Forestry	Music	Divinity	Medicine	Art	Law	Total
1888–89 . . .	688	308	79	—	—	133	35	47	106	1365
1889–90 . . .	736	343	81	—	—	136	54	42	111	1477
1890–91 . . .	832	379	104	—	—	139	63	44	116	1645
1891–92 . . .	888	461	76	—	—	122	74	37	155	1784
1892–93 . . .	966	529	125	—	7	109	76	31	171	1969
1893–94 . . .	1086	601	143	—	9	119	80	30	188	2202
1894–95 . . .	1150	662	138	—	25	116	100	41	195	2350
1895–96 . . .	1199	584	176	—	53	105	125	46	224	2415
1896–97 . . .	1237	553	227	—	76	104	138	53	213	2495
1897–98 . . .	1241	543	262	—	70	102	128	78	198	2500
1898–99 . . .	1224	567	283	—	76	95	110	84	194	2511
1899–00 . . .	1224	571	283	—	107	100	135	90	195	2517
1900–01 . . .	1190	610	304	7	126	89	133	75	213	2542
1901–02 . . .	1240	675	338	31	69	100	147	66	249	2685
1902–03 . . .	1205	738	346	40	47	112	145	29	253	2725
1903–04 . . .	1250	837	333	64	82	97	141	35	259	2963
1904–05 . . .	1275	871	353	63	89	96	139	39	234	2992
1905–06 . . .	1322	885	355	54	90	66	137	51	278	3208
1906–07 . . .	1351	895	360	59	87	65	154	41	294	3247
1907–08 . . .	1315	948	357	61	83	80	137	39	339	3306
1908–09 . . .	1273	953	383	70	95	105	140	47	434	3434
1909–10 . . .	1229	959	396	82	81	108	124	50	352	3297

CHAPTER III

PRINCETON UNIVERSITY

PRINCETON is the most interesting of American universities to study just now, because it is in what Professor De Vries calls a "mutation period." Œnothera Lamarckiana cannot be compared with it for novelty and rapidity of transformation. Nor can other universities of the day. To find anything equal to it we must go back fifteen years to the time when Harper built the new University of Chicago out of the ruins of the old, or forty years to the time when Eliot took hold of Harvard.

At every one of the fourteen universities I visited I was met by the remark: "You have come to us at a critical moment. This university is just now in a transition stage." No doubt the remark was to a certain extent true of all. It should have been more true than it was, for in some cases the transit was so slow that I was not able to detect it. But there is no question about Princeton. Evolution is proceeding there as Darwin said it did not, *per saltum*. It is going forward by leaps and bounds, not in numbers, but in much more important ways, in developing new forms of college life and training.

What I like about Princeton is that it has an ideal of education and is working it out. It is not exactly my ideal, but that does not matter to anybody but me. The remarkable thing is that here is a university that knows what it wants and is trying to get it. Many universities seem to me to be drifting. Some of them are trying in vain not to drift. Some of them are bragging about the speed they are making,

when they are really being borne along by the current of affairs, and not keeping up with it at that. But Princeton is steering a pretty straight course toward a port of its own choice, regardless of wind and current, perhaps even heading a trifle upstream.

The fault of American universities in my opinion is their dead level of uniformity and conventionality. They imitate one another, and where they cannot imitate they pretend to have imitated. Yet educational psychology has not become so exact a science that it can be regarded as certain what studies should be taught, in what order, and how. If some educational revolutionist were to arise and assert that the whole curriculum should be inverted, that we should begin with metaphysics and ethics and end with geography and arithmetic, nobody could prove him a fool, and if he were given a few millions and a free hand, he might prove that he was not.

But I am wrong in using such wild words in connection with Princeton's educational novelties. They are not revolutionary or chimerical. In fact Princeton has shown its originality chiefly in going ahead and doing what others have always said ought to be done. Almost every educator, if asked what was the main fault of our large colleges, would have said that it was the loss of personal relationship between instructor and student, resulting in ill-adapted and careless teaching on the one side and in diversion of interest on the other. Teacher and pupil were not even on opposite ends of the same log. They were at opposite ends of a telephone working only one way. Now Woodrow Wilson is bringing them together by means of the preceptorial system. It may not be the only way or the best way, but it is one way. It is something that ought to be done and he is doing it. It is therefore worth while to watch him.

Everybody agrees, as I said, that instructor and student ought to be brought together. The real question is, Where?

It is like arranging a royal visit. Shall they meet on the territory of the one or of the other, or on a neutral strip, where neither of them is at home? Usually, whenever it was decided by the powers that be in a university that there should be "a personal relation" established, it meant that the instructor was to go the whole distance. He was to "take an interest" in his students, which meant practically that he was to attempt to ingratiate himself by talking with them about the things in which they were interested. The docile professor, moved by his conscience or the Powers, inserted in his prayer the petition, "Make me a child again, just for to-night," and spent an arduous evening trying to talk athletics, class politics, and campus gossip in a genial and informal manner with the boys. They parted after such a function with mutual feelings of kindliness and contempt; kindliness because the effort to make one's self agreeable never fails altogether of producing an effect, although not always the effect intended, contempt on the part of the boys for a man who displayed so gross ignorance about such important matters, contempt on the part of the professor for those who regarded such matters as important. Would it not be better to reverse the procedure and induce the students to cultivate the acquaintance of their instructors, to become interested in the interests of the faculty? Is not this, in short, what education really means? It involves, however, the change of the center of gravity of student life, giving them an entirely new conception of the purpose of a college course.

The prevailing philosophy of the day I found expressed in illuminated mottoes or golden texts on the walls of student rooms, East and West, of which one of the favorite forms is:—

Don't Let Your Studies Interfere With Your Education

The students of earlier days had more aspiring and conventional resolutions upon their walls, but perhaps they did not succeed in carrying them out any better than those of the present. The college world reflects in miniature, like a drop of ink, the world outside, and this is simply a manifestation of the dominant tone of the age, the affectation of an inverted hypocrisy which has come as a reaction from the priggishness of a previous generation.

In this perverse conception of the aims of a college course I see the malign influence of the alumni. When "the old grad" of any university sits by the open fire of the commons or fraternity house and the young men gather around in an attitude of disciplehood that they rarely show to their official teachers, what does he talk about? Is his conversation apt to be of a character that could be called edifying? Does he help along what the president and faculty are trying to do with these boys, or does he counteract their influence? What sort of an idea would they gather from his stories of the college life of his day about the educational influences which have contributed to his successful career?

Of course he is merely lying, but that is only a partial justification of his conduct. He is telling the most harmful kind of lies. In order to make himself solid with the boys he is making himself out unfit to associate with anybody. The trivial lark which the president very likely knew all about at the time and did not think worth mentioning has been magnified by his memory by years and repetition until it has become a penitentiary offense of supernatural cleverness. He probably was a decently studious youth in his day, but now he brags of idleness and evasion of duties. His boasted amnesia of all class-room work is largely affectation. Give him a few hours to brush up, and he could beat any boy in the room on a page of Virgil. A college has enough to apologize for in the conduct of its alumni without their making themselves out any worse than they are. It

is no wonder that it is considered desirable in most universities that the undergraduate should, as far as possible, leave the campus at commencement before the graduates come back for their triennial or decennial. They are not regarded as a wholesome influence, even if they do not actually set an example of riot and dissipation.

The favorite lie of the old grad is "nothing I learned from books was any help to me." And he acts in accordance with this by throwing the weight of his influence, money, and applause mostly on the side of the various activities which divert the undergraduate from his books. Consequently college life everywhere becomes increasingly pleasant, luxurious, and alienated from legitimate collegiate aims. No one has better described this condition of affairs or has done more to remedy it than President Wilson. The college to which he was called as president was popularly known as "the pleasantest country club in the United States," but that was not the kind of institution he wanted to preside over. His "Report on the Social Coördination of the University"[1] exploded like a bombshell on the peaceful Princeton campus and shook its historic buildings to their foundations. The opposition of the alumni checked the agitation of his proposal to substitute "residential quads" for the upper-class clubs, and in deference to their protests he consented to lay the motion on the table for a time and give them a chance to work out a remedy for the conditions in their own way. His description of these conditions is worth quoting because it applies in some degree to many other or all other colleges, but not every president has had the courage to point it out so plainly: —

"We realized that, for all its subtle charm and beguiling air of academic distinction, Princeton, so far as her undergraduates were concerned, had come to be merely a delightful place of residence, where young men, for the most part happily occupied by other

[1] *Princeton Alumni Weekly*, June 12, 1907.

things, were made to perform certain academic tasks; that, although we demanded at stated times a certain part of the attention of our pupils for intellectual things, their life and consciousness were for the rest wholly unacademic and detached from the interests which in theory were the all-important interests of the place. For a great majority of them residence here meant a happy life of comradeship and sport interrupted by the grind of perfunctory 'lessons' and examinations, to which they attended rather because of the fear of being cut off from the life than because they were seriously engaged in getting the training which would fit their faculties and their spirits for the tasks of the world which they knew they must face after their happy freedom was over."

President Wilson seems to have taken a hint from modern medicine, for he proposed to cure Princeton by injecting into its system an antitoxin from Oxford and Cambridge, which have long had the disease in its most virulent form. He imported from the English universities their system of tutors, their plan of separate residential colleges, their architecture, and some of their men.

The adoption of the title "preceptor," over which there was much discussion, is indicative of the process of adaptation. "Tutor," having come in America to mean crammer or coach, was not suited to the dignity and importance of these new instructors, who were not expected to assist the students in doing their required work, so much as to induce them to do work that is not required. They were to be neither lecturers, drillmasters, nor examiners, but teachers in the primitive and genuine sense of the word. The aim was, in short, a revival of the lost art of teaching.

The preceptors have the rank and title of assistant professors and may give courses of their own in the graduate school. The latter privilege is somewhat illusory, for the graduate students are so few at Princeton that there would not be more than one or two apiece if they were divided evenly among the preceptors. The addition of so large a body of new men to the faculty — they now number fifty



WOODROW WILSON,
President of Princeton University.

and the other professors seventy-three — facilitated the adoption and carrying out of the later reforms. It seems likely that President Wilson, in the course of his researches in English government, came across some reference to the advantage an incoming party gains by the creation of new peers.

It was hard to find suitable men for this new profession, because our universities have not been turning out teachers. There has been but little demand for them hitherto. If a professor happened to be inclined to take a personal interest in his undergraduate students, he had to be careful how he indulged in this fad publicly, for he was liable to be suspected of incapacity for research. It was also dangerous to one's reputation for scholarship to profess a knowledge of more than one subject or fraction of a subject, and to admit the ability to teach any other even to elementary students. This necessitates one radical departure from the English system, where the same tutor may instruct a student all through his course. At Princeton, as a rule, a different preceptor has to be provided for each course. The distribution of the preceptors at present is: Classics, 12; English, 10; Modern Languages, 10; History, Politics, Economics, 10; Mathematics, 6; Philosophy, 5; Art and Archæology, 2; Geology, 1. The preceptorial system has not been extended to the sciences in general, for it is primarily an attempt to secure for the humanities the benefits that the sciences have enjoyed in the "elbow instruction" of the laboratories. It has had, however, an interesting reflex influence on science teaching. Scientific professors everywhere have found it easy to get three or four times as much work out of the students as their colleagues on the literary side of the faculty could for their courses, which are nominally equivalent. When the latter complained, the reply of the men of science was practically, "Well, why don't you get the students interested in your subjects, too, so

they will hang around your seminary rooms all day, as they do around our laboratories?" and the way in which they said it implied, "You know you can't." At Princeton it is the other shoe that pinches. The scientists complain that the preceptorial studies steal all the time, and the students get so much interested in them as to neglect their sciences. They also demand more assistants, so as to give more personal attention to their students, and they are getting them. In most chemical laboratories there is one demonstrator to a group of students from eight to twenty, and the best he can do is to keep walking around and see that the students do not light the hydrogen generator prematurely or cut a stick of sodium under water. At Princeton there is one demonstrator to every five or six students, and he stays with them, quizzing, explaining, giving them problems and seeing that they know what they are doing and get it right in their notebooks.

The working of the preceptorial system is in general this: The undergraduate carries five courses at a time of three hours a week each. Two of these hours consist of the ordinary lecture or class-room work; the third is devoted to the preceptorial conference. In this the students meet at any convenient hour of day or evening in the study of the preceptor in groups of three to six, and more or less informally discuss the subject-matter of the course. The preceptor is not expected to attend the lectures or to follow the course from day to day, but to give the students such drill and personal assistance as they most need and to guide and encourage them in collateral reading. Preceptors often shift their students from one group to another until those of like mind and capabilities are brought together, so they may employ very different methods with the different groups and vary the amount and character of the work as they please. The conferences are intended to be regarded as opportunities rather than tasks, and the student is expected

to keep his date with his preceptor as he does a business or social appointment. The preceptor has not the power to assign the student's grades, although he may debar him from examination if he regards his work as unsatisfactory. The student's final grade is obtained as a result of a conference, at the end of the term, between the examiner and the preceptors in a particular course, in which the preceptors have an opportunity to make a report upon the general character of the conference work of their students. This report may have the effect of raising or lowering the examination grade, or the preceptor may feel satisfied that the examination grade represents adequately the student's desert. The best thing about the preceptorial relation is probably the opportunity it affords for unforced friendships to spring up between older and younger men. For this purpose it is superior to freshmen receptions, faculty-student baseball games, afternoon teas by faculty dames, advisers' evenings, class parties, and similar mixing devices in vogue elsewhere. The student under the preceptorial system has at least had the opportunity to form the personal acquaintance of a number of cultured and scholarly men, and of conversing with them repeatedly and informally on the subjects with which they are most conversant. This is more than can be said for the opportunities afforded by our other great universities. The love of learning is contagious rather than infectious. It is conveyed mostly by personal contact, rarely through the medium of buildings, furniture, clothing, or books. A boy at Princeton has a good chance of catching it sometime during the four years if he is at all susceptible. That is all there is to it, anyway.

Obviously whether a preceptor is a good thing or not depends on whether he is a good preceptor. Many brilliant lecturers or distinguished investigators would not do in that capacity. He must have tact and kindliness as well as scholarship. He must know boys as well as books. Every

effort is being made at Princeton to keep the system flexible, to give the preceptor an opportunity to work out his own methods, to prevent him from becoming merely another cog in the educational machine. A few of the professors say they do not want to have a preceptor "coming between" them and their students. Some preceptors are more popular than others, and the students want to be assigned or transferred to them. Sometimes the "personal relation" fails to develop according to program. One student was unable to tell the president the name of his preceptor, although he did know where his room was. The chief difficulty so far manifest seems to be that the preceptorial conferences tend to become merely another class with the faults of the class-room system, the old dreary round of lessons assigned and recited per schedule.

But the preceptorial system on the whole works very well. Everybody agrees that it has made a great improvement in studiousness. A man who talks shop at the club tables is no longer whistled down. The library is much more used than formerly and for voluntary reading in lines suggested by the conferences. Still the students do not work so hard as they do at a university like Columbia, where student activities are not so numerous and attractive. This is, of course, a personal opinion, insusceptible of proof. It may be disbelieved by those who know less than I about it or contradicted by those who know more.

The preceptorial system is a new broom and sweeps clean. The men who are "creating this new rôle" are conscious that they are being watched by other universities with emotions of mingled hope and fear: hope that the system may be just what is needed to make collegiate education effective; fear lest they too will have to put in preceptors, and where can they get the money for it? The real test of the system will come in later years, when the preceptors get old, and lazy, and tired, and mechanical, and no longer able to tell

apart the young men who file through their studies in unending line. And what sort of men will the preceptors be when the system becomes old and commonplace? Will they be young and inexperienced men, just out of college, not interested in their duties, waiting for a chance at "something bigger" elsewhere, or taking the job as a "grubstake" to keep them alive while they are writing a book or working out a scientific discovery that will make them famous? If so, they have the same faults as the younger instructors elsewhere. On the other hand, if a man is contented to remain a preceptor all his life, teaching the same elementary studies over and over to a handful of students, living on a small salary, probably in a students' dormitory, a celibate and recluse, will he be the most inspiring and profitable of associates for young men? But this is borrowing trouble from the future.

Having decided that the students are to study something, the next thing is to decide what they are to study. On this point Princeton has also very definite ideas, and, unlike Harvard, does not regard it as an unwarrantable interference with personal liberty to impose them on the student. The faculty, believing that they know more about the proper sequence and correlation of studies than the students who have not taken them, have arranged four well-defined courses of four years, leading to the degrees of A.B., Litt. B., B.S., and C.E., in which most of the work is prescribed or emphatically advised. This leaves the student little opportunity for the desultory "strolling" or "tasting" which some educators regard as one of the main benefits of a college course. That is, the student at Princeton, in the place of free election of particular studies, has the option of different groups.

Latin is required of all students, both for entrance and in the Freshman year. Only those who take Greek can get the Bachelor of Arts degree. "The degree of Bachelor of

Science is open to those who concentrate in one of the mathematical or scientific departments during the Junior and Senior years, and the degree of Bachelor of Letters has been constituted to be open to those who concentrate in one of the departments in philosophical, political, literary, or other humanistic studies." After completing his Sophomore year the student may choose the department in which he will do his main work for the remaining two years. He has the option of any one of the following eleven departments, for which his previous work has prepared him: I, Philosophy; II, History, Politics, Economics; III, Art and Archæology; IV, Classics; V, English; VI, Modern Languages (Germanic or Romanic Section); VII, Mathematics; VIII, Physics; IX, Chemistry; X, Geology; XI, Biology.

The Litt.B. degree looks to an outsider like a monument erected on the field of a drawn battle. There does not seem to be any pressing need for another degree, so long as nobody can tell the meaning of those we have. But for the kind of education for which it especially stands, a modernized humanistic training, there is an urgent demand. The new degree, in spite of its comparative lack of academic prestige in this country, has grown in popularity since its introduction at Princeton, as the following table shows:—

Degrees conferred in the Different Undergraduate Departments of Princeton since 1905, when the New Degree of Litt. B. was first Given

	A.B.	Litt.B.	B.S.	C.E.
1905	168	9	52	31
1906	143	25	34	29
1907	143	51	30	34
1908	124	53	18	28
1909	147	54	21	34

CANDIDATES FOR DEGREES, REGISTERED JAN. 1, 1910

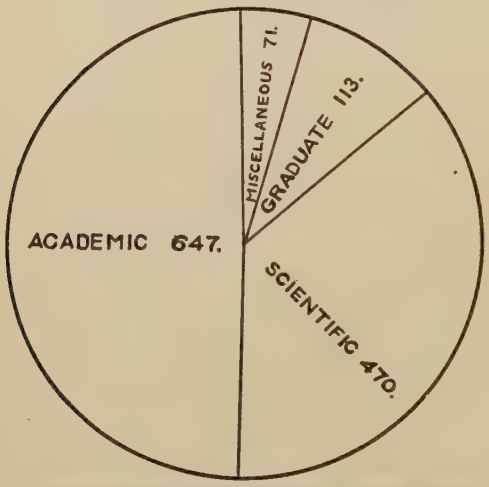
	A.B.	LITT.B.	B.S.	C.E.
1910	131	38	20	48
1911	100	68	17	52
1912	139	138		66
1913	151	159		37

The undergraduate figures of the last four lines above are not exact, for some students are not classified and others will change or drop out. The candidates for the degrees in science and letters are not differentiated until their Junior year. Apparently the new course has drawn from both the A. B. and B. S. courses those who did not care for either the classics or the sciences, but took them because they had to. Probably some allowance must also be made for those who entered the new course on the expectation that it would be easier than the others, in which they have doubtless been disagreeably disappointed. Students in their choice of studies are apt to be guided rather by their prejudices than by their preferences. The remarkable increase in popularity of the course in civil engineering, as shown above, is in part due to the fact that it was the only way to get through Princeton without Latin. In 1909 a second language was added to the entrance requirements and no conditions are allowed in mathematics, and this rule, to quote the president's report,

"would seem to be having the desired result, namely, that of keeping out of the C. E. Department men who have no serious purpose of studying engineering and of diverting them to the B. S. Department, where they more properly belong."

The modern college president, unless he avoids responsibility by letting the students seek their own level, has to keep pacing back and forth along the dams ready to stop up any weak point before the flood breaks through.

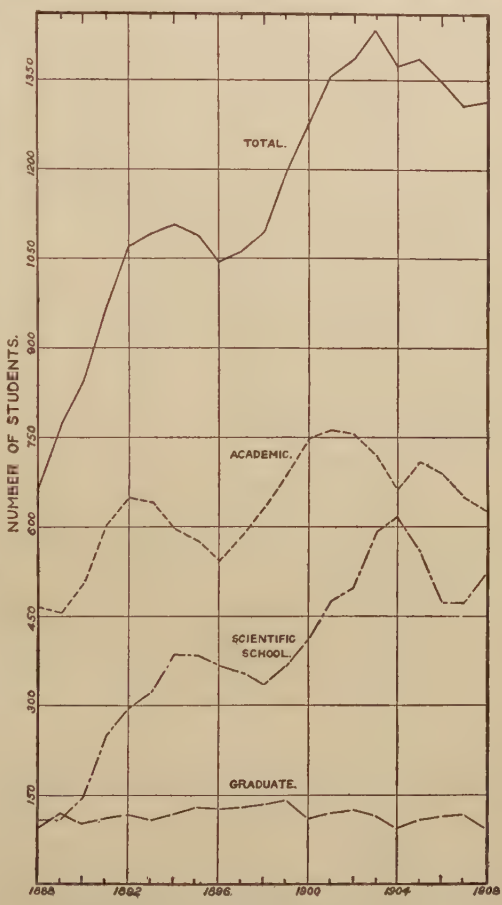
This group system of undergraduate courses has, as I say, been very carefully worked out at Princeton and should be studied by all who are concerned with such matters. It insures a certain amount of concentration and correlation, and yet allows considerable adaptation to the tastes and needs of the individual. It is, so to speak, like buying a ready-made suit of clothes in a well-ordered department store where a dozen standard sizes are kept in stock, and slight alterations are made without extra charge to please the customer. As we saw from the examination of the records of the Harvard Seniors, the free elective system is equally abused in opposite ways; about 15 per cent elected courses that were too narrow and the same number courses that were too scattering as judged by the common idea of a well-balanced education. Both these extremes would be prevented by the Princeton scheme.



DISTRIBUTION OF STUDENTS IN PRINCETON UNIVERSITY, 1907–1908.

It should also be borne in mind that the "free elective" system is after all not true to its name. When one comes to analyze it closely in a particular case, it diminishes almost to the vanishing point of a hypothetical though comforting potentiality like the freedom of the will. The student cannot always study what he most affects, for it may have as a prerequisite a course which he has neglected or for which he has a personal repugnance. Or there may be a conflict

of hours, and President Eliot himself suggests the judicious manipulation of the time-tables to prevent unwise combinations of courses.[1] It therefore happens sometimes that a student whose first two years at college are prescribed may have in his last year a greater range of selection than one who has had no restrictions from the beginning. That is, under the free elective system the Senior may have less real freedom of choice than the Freshman, while under the partially prescribed system the most freedom of choice is given to Seniors who can most judiciously use it.



STUDENTS IN PRINCETON UNIVERSITY FOR THE LAST TWENTY YEARS.

But the fault of the Princeton system, as well as of all other attempts that I know anything about to secure a well-balanced education by making compulsory certain studies or groups of studies, is that the subjects are chosen according to their nominal and traditional signification, or to give

[1] "University Administration," p. 133.

every department a fair chance at the students, and not according to their real educational value. One cannot tell anything about the character of the training given by a certain course from its name or department. Their names come mostly from the chance of historical development or connection with a particular profession. Whether a study trains the eye, cultivates the memory, stimulates the imagination, improves the taste, or inspires the soul depends not so much upon the subject-matter as upon the way it is taught. The complementary distinctions of studies as technical and cultural, humanistic and scientific, practical and theoretical, historical and logical, represent real and very important differences, but the separation cannot be made by general rules based on catalogue classification. A study may completely alter its character in a few years, as has physiology; may pass suddenly from the right to the left wing of the faculty without changing its name or department, like psychology. So, when we read in the Princeton catalogue, for example, that a junior who elects to concentrate in chemical studies takes

> "31a, 32a. Chemistry.
> 33, 34. Chemistry.
> 31, 32. Physics.
> A course not in Division D.
> An elective"

it does not necessarily mean that four of his courses give the same sort of mental discipline, two of allied nature and two of a very different character. Chemistry 33, Qualitative Analysis, is partly manual training. Chemistry 31, Advanced Inorganic and Theoretical, has in it much mathematics and some metaphysics. These two chemical courses are about as far apart as could well be, and if his "course not in Division D" (Science and Mathematics) is Philosophy and his "elective" is Calculus, he will find them overlapping his Theoretical Chemistry much more than if he

had been permitted to elect Botany, from which he is debarred because it is classed with Chemistry in Division D. I have no fault to find with this group of studies even in this case, but merely wish to call attention to the fact that a rule like this, which provides for a distribution of studies in different departments, does not insure a variety of mental training, although it does have the advantage of introducing the student to different fields of human thought. A man who knows Tom, Dick, and Harry has probably no more diversified acquaintance than if he knew three men named John.

All this may seem trite and trivial, but it is not. The longest and most acrimonious sessions of faculties and committees are generally those devoted to the combinations of courses, and their length and acrimony are, it seems to me, chiefly due to the failure to keep in mind the fact that two studies having different names may be more alike than two studies of the same name. The same lack of discrimination of actual education values vitiates much of the discussion between the advocates of cultural and technical training. It is a mere matter of chance that stenography is not taught as a recondite branch of linguistics, in which case it would be admitted to the most select universities instead of being scorned by them on account of its being in trade. Some classicists have argued that Latin should be adopted as an international medium of communication, instead of Volapük, Esperanto, or other made-to-order language. It is lucky for them that their recommendation is not likely to be adopted, for they would at once lose their present honorific position in the faculty. Latin would become as utilitarian as it was in Roman and medieval times, and would be taught in the business colleges to clerks and typewriter girls. Nothing would then be heard of its unique disciplinary, logical, and cultural value, and all decent universities would refuse to accept it for entrance.

The chief advantages of the Princeton plan of semi-prescribed courses, as contrasted with the Harvard system of free electives, are the economy and convenience of keeping students together, and the assurance that all the students in a particular class have had the same preparation for it. As a corollary of this we find another marked departure from Harvard principles, the teaching of the same subject in a different way for students who have had a different preparation or who want it for a different purpose. For example, there are three classes in elementary physics: first, for students who want it as a deep foundation for advanced work in the physical sciences; second, for engineers who need a practical familiarity with it; and third, those whose main interests lie in humanistic lines and take physics as a culture study.

A segregation of students, according to their ability and industriousness, is effected by the new honors system. This was first introduced in the department of mathematics and physics two years ago, and having proved a success, is this year adopted by the classical department. I have called attention to similar movements in Harvard and Yale, but Princeton seems to be working out this, as it is its other ideas, in a more thoroughgoing and consistent fashion. There are two very interesting features about this movement: first, the question of the advisability of separating the good students from the poor, and second, the adaptation of instruction to the needs of those who are not to be specialists.

The movement for differentiating students according to their ability is a general one extending from the kindergarten to the university all over the country. It received a powerful impetus when statistical psychology showed how great were the differences in capacity between the individuals who were being treated in our schools as though they were all alike. From tests on thousands of children in the public

schools of New York it was found that the bright students were six times as good as the dull students in all sorts of work, from spelling to practical reasoning, that is, they could learn six times as fast or do six times as much in the same time. The difference between the highest third and the lowest third of a class was three or four times. And ability is so correlated with memory that the children who learned the quickest generally remembered the best. In tests of grown people in reading the same holds true. The fastest readers as a rule remember both most and longest. University students are a selected lot, but since their intellectual tasks are of a more complex and advanced order, the differences in their ability to master them are probably greater than among school children.

The Harvard theory is — or rather was, for, as we have seen, it is being modified — that classes of diversified elements are preferable. President Eliot is emphatic on this point: [1] —

"Almost every course of instruction largely resorted to in colleges where the elective system is broad contains graduates, members of all the college classes, and special students, all mixed together. When a scientific school makes part of the institution, some of the scientific courses will also be resorted to simultaneously by members of all the different classes. This mixing of students of different ages, and different academic status, is an unqualified advantage, provided that all are united in a common purpose to master the course they are attending together. The younger student from a lower class is stimulated by the older men with whom he associates, and if all the attendants are qualified to pursue the study to advantage, the older men suffer no harm."

Even with these two provisos, which in practice cannot be guaranteed, it is a very sweeping statement to say that diversity in a class is "an unqualified advantage." It seems to me rather that advantages can be seen in both plans, and that is why I am glad to have Princeton test the question by carrying out the opposite of the Harvard theory in a

[1] "University Administration," p. 139.

consistent and systematic way. The preceptorial system, the segregation for conferences, Special Honors and the Proseminaries as well as the rigid entrance and course requirements, and the dormitory and commons regulations, are all working to the same end, to the formation of small, homogeneous groups of students and the adaptation of instruction to the individual.

Each class is divided into five groups at the end of the first term, according to the grades, as follows: —

I. Very high standing; not more than 10 per cent of class.
II. High standing; not more than 20 per cent of class.
III. Medium standing; not more than 35 per cent of class.
IV. Low standing; not more than 25 per cent of class.
V. Very low; the remainder of the class.

Students who have completed their Sophomore year with an average standing in their classical courses not lower than the third group may enter the Honors Course in the Classical Humanities for their final two years. They have special classes provided for them that the οἱ πολλοί may not enter, such as the Proseminary; they have a greater range of election and are not so strictly bound by the rules of compulsory attendance on classes, etc. If they fail to do satisfactory work, they lose these privileges and are reduced to the ranks.

Here is another indication that the line of cleavage in the American university will be between the Sophomore and the Junior year, for students at Princeton are for the first time treated as true university students when they become honor men. At Harvard all are given the freedom of the university from the moment they enter its gates, whether they are worthy or unworthy. President Jordan would prefer to have no Freshmen and Sophomores at all at the university, and no Juniors and Seniors except those who are well qualified and in earnest. Princeton separates out those deserving of university privileges, keeping the

others in the institution, but under a collegiate *régime*. If President Jordan gets a chance to try his plan we shall see three very pretty experiments going on at the same time.

The second interesting feature of this honors system is that it indicates a tendency toward a mutual approachment of the classicists and scientists; the kind of a reconciliation that is genuine and lasting, wherein neither party budges from its own ground, but each holds out a helping hand to the other, or, at least, to the world outside the field of the specialist. The fault with our system of education, from the bottom up, is that it is too exclusively preparatory. It is everlastingly preparing students for things that the most of them are never going to do. The high school prepares for college, but few of its graduates go there. The college prepares for graduate research, but few of its graduates take it up. The medical schools aim to make investigators instead of doctors; the theological seminaries turn out more theologians than pastors. Now, I am willing to admit that the selection and training of the few who are capable of extending the bounds of human knowledge are so important to society that the interests of the many might well be sacrificed to them, but I submit that it has not been proved that it is necessary to make this sacrifice in order to get the highest grade of men at this highest grade of work, and further, that it has been proved that under the present system we are not getting the highest grade of men into research. Consequently I am interested in all attempts to get the specialist to doing something besides making more specialists; that is why I am going to quote a passage from the Princeton catalogue which seems to me better reading than catalogue literature usually is: —

"The purpose of the Honors Course is not philological or scientific, but literary, historical, political, artistic, and philosophical. The aim is to make clear through lectures, preceptorial conferences, and intimate personal work in the Proseminary the fundamentally

valuable lessons of antiquity for modern thought and life. The reading of selected masterpieces of the ancient writers, with abundant help given to the student in the way of explanation and criticism, is a necessary part of the course. In this reading the student will be guided as closely as possible along the line of his special aptitudes and desires. So far as practicable, the members of the Honors Course are assigned for their reading and conferences to instructors of their own choice. Certain parts of the reading will be slow and critical, but it is also intended to develop the practice of fluent and copious reading, particularly in the fields of history and literature."

It would have been a great setback to science and therefore to civilization in general, if this program had been adopted and lived up to by the classicists of forty years ago, for if it had been, they never would have been ousted from their educational monopoly.

From the physical side I find a similar indication of good will toward all men, though less adequately expressed, as befits a nonliterary department:—

"In the first place, they enable undergraduate students to devote the greater part of their energies to subjects of which the value, as providing training in clearness and quickness of thought, is admittedly unique. In this way it is hoped that the courses will provide a valuable undergraduate education for those students whose tastes and abilities lie in the direction of the exact sciences, and in addition that the courses will be of special value in cultivating that acuteness and clearness of reasoning power which are of such high value in the legal and other professions.

"In the second place, the courses afford an appropriate preliminary training for those who intend to find a career in teaching and research."

Every university should have a Department of Applied Greek and a complementary Department of Humanized Physics, and the benefits of these departments also should be extended as freely as is practicable to those who need them most, that is, to those whose main work is in another field. Princeton seems to have a good start toward this, and it is to be hoped that when the university has a

few thousand technological students they will not be entirely ignored by the classical departments. When Mr. Wilson assumed the presidency it was commonly supposed that he was opposed to scientific education, especially of a utilitarian nature, but he either was or is a broader-minded man than his critics at that time thought him. His first efforts were devoted toward building up a strong classical school and toward making the training in the classics attractive and profitable to the students. Having accomplished this, — at least I do not see what more can be done, — he has turned his attention toward providing for those who persist in demanding a different kind of education. The greatest development of Princeton, as of Harvard, will next be in scientific and technological lines, both graduate and undergraduate. Schools of applied science budded on to a classical college like Princeton may be expected to produce a new variety, which will be worth cultivating elsewhere. An indication of this appears already in the announcement that the pure and applied sciences are to be kept under one head. I have criticized Harvard for making a pronounced distinction between them in starting its new graduate schools and have tried to show how the maintenance of this separation has been an injury to Yale, so I am glad to quote President Wilson in support of my view. In recommending, in his report of January 1, 1909, the creation of a new officer of the university, a Dean of the Departments of Science, to have oversight of the departments of pure science as well as of the present technical schools of civil and electrical engineering and the future school of mechanical engineering, he says: —

"By this broad title I would seek to ignore the antithesis which has been too sharply, not to say artificially, set up between pure and applied science. There is a difference, of course; but the two things should never be separated, and the line which divides them is nowhere, should nowhere be, distinctly traceable. It is our pur-

pose to unite them in all that we do at Princeton for the promotion of scientific professional study, embodying from the outset the newer spirit now observable in the scientific professions."

As at Yale, the majority of the Princeton graduates go into those branches of business and public service for which as yet no well-defined system of professional training has been provided by either institution. According to the decennial reports of the classes of 1895 and 1896, the vocational distribution of the graduates is approximately as follows: —

	Class of '95 per cent	Class of '96 per cent
Business	43	43
Law	21	19
Ministry	10	9
Medicine	8	8
Engineering	5	4
Teaching	4	8
Public Service	2	5

Of course Law includes many whose occupations are not strictly legal, though I do not mean that they are illegal, either. During the last five years half of the graduate students at Princeton have specialized in the department of history, politics, and economics, and about the same proportion of undergraduates have elected such courses. Of 104 men in the diplomatic service of the United States over 10 per cent have Princeton degrees, three of them heads of legations and eight secretaries. It remains to be seen whether the universities which are now providing special courses for such positions will succeed in producing men better qualified for them.

Princeton has been included in this series somewhat arbitrarily, because I wanted to call attention to the new things it is doing in the way of collegiate instruction. It is not among the fourteen foremost universities of the United States if we take as the criterion age, size, wealth, cosmo-

politanism, publications, graduate students, professional courses, or public services. It is the youngest of these universities, having borne that title less than thirteen years. It has the smallest annual income, except Johns Hopkins. For 1908 Princeton's income was $411,910; the University of Minnesota had 50 per cent more, Harvard and Columbia more than four times as much.[1] Princeton is the smallest of these fourteen universities, except Johns Hopkins, having about a third the number of students of collegiate grade of Harvard, Michigan, and Columbia. Princeton University has no schools of law, medicine, pedagogy, commerce, agriculture, mechanic arts, forestry, dentistry, pharmacy, veterinary science, art, architecture, or music. It has no summer session, conducts no extension work, gives no evening courses, and has no correspondence department. It has no university press, and supports no scientific, technological, or humanistic periodicals. It serves no State in an administrative or advisory capacity, and carries on no experimental investigations at the request of the people. Such things as these have become so associated in the American mind with the word "university" that the right of Princeton to call itself a university has often been questioned.

The question hitherto has been an idle one, as useless as to discuss whether a certain man has a right to put Esq. after his name or Prof. before it. But now three influential bodies are engaged in defining the word "university" with all the solemnity of the Académie Française at work on the dictionary. These are the Carnegie Foundation for the Advancement of Teaching, the National Association of State Universities, and the Association of American Universities. They are pretty well agreed, although the Association of State Universities goes much farther than the other two in

[1] I am using in these comparisons the figures given in the Third Annual Report of the Carnegie Foundation.

its specifications, but this I shall discuss later. Princeton was one of the charter members of the Association of American Universities, and is therefore not required to submit its claims to the tests now imposed upon applicants for admission. This Association was formed nine years ago of the following fourteen universities: California, Catholic University of America, Clark, Chicago, Columbia, Cornell, Harvard, Johns Hopkins, Stanford, Michigan, Pennsylvania, Princeton, Wisconsin, and Yale. It was intended at first as a somewhat exclusive and informal organization for private consultation between the heads of these institutions, but the demands of other universities for admission, and the refusal of Dutch and German universities to recognize the degrees of any American institution except these, forced the Association to adopt objective standards of admission. The Association now requires a university to have suitable entrance conditions, a strong graduate department, and at least one professional school having a combined arts and technical course of five years. Princeton barely qualifies for this last requirement by its School of Electrical Engineering. This gives only two years' work, but requires a bachelor's degree for entrance. There are now only seven students so qualified in the school. The Civil Engineering course of four years is altogether undergraduate. These are all the professional or technical schools connected with Princeton. The Theological Seminary in the same town is somewhat ostentatiously kept at a distance. It is not so nearly allied with the University as Union Theological Seminary is with Columbia. The number of Seminary students taking incidental graduate work in the University has been falling off of late, and is this year forty-three.

The total number of students doing regular graduate work in Princeton University in 1908–1909 is therefore forty-eight, half of whom are Fellows. Twelve are in the Department of History, Politics, and Economics. The Department



Princeton University.

NASSAU HALL.

Built in 1756 and occupied by the Continental Congress in 1783.



Princeton University.

THE GYMNASIUM.

Containing a main hall of 166 feet by 101 feet clear space, a trophy room, swimming pool, and committee rooms.

of Classics, one of the strongest in the country, with twenty-two instructors, not counting related departments, has only five graduate students.

But it is not profitable to spend more time in attempting to define Princeton's status, because Princeton is not static. If it is not a university now, it is going to become one in the fullest sense of the word. At present the metamorphosis has only affected externals. Princeton is still a college in spirit. The graduate and professional students are too few to exert any decided influence over student life. The absence of older men, of men who mean business, who are tremendously set on something, gives to the place an air of leisure and of youth. I know that there is hard studying done there, that the students are noted for strenuous athletics, but they do not make much fuss about it, they do not seem hurried and worried. The machinery does not rattle and bang as it does in some universities. I do not know that I ought to mention such intangible impressions. Though they are very real to me, they can be only hazily expressed, and not substantiated at all.

The students at Princeton struck me as being more boyish than elsewhere. This is not a reproach. I do not think youthfulness necessarily objectionable in youth. They seemed like Peter Pan, not quite grown up and not quite wanting to be. I believe that Eastern students are, as a rule, a trifle younger for the same grades than in the West, but that is not it. The Easterners are more advanced in their studies, more carefully trained, more sophisticated, yet it does not seem to me that the Westerners could at any period of their lives have been so youthful in spirit as the Princetonians. The Westerner is in dead earnest, if not about his studies, then about getting out of them. The Princetonian does not seem to care whether school keeps or not; but this is not a cynical affectation of indifference, it is the natural indifference of irresponsible and careless boyish-

ness. I cannot say exactly what gave me this impression. Perhaps it was the way they trooped into the back seats of Marquand Chapel and grabbed their certificates of attendance from the "spotters" at the door; or the air with which they wore their yellow slickers (it rains every day at Princeton. I know, because I was there a week); or else it was their habit of whittling their desks, and talking and laughing during certain lectures in a carefully modulated undertone. At the baseball game — it was Syracuse, I believe, they were beating — some students in black caps crept up under the shelter of the grandstand to get out of the rain, and the other students whistled them off, and they went home. I asked why, and they said they were Freshmen. I asked why again, and they did not answer. I did not see the "horsing" of the Freshmen. It is thought to be amusing. It is a sort of hazing with the brutality eliminated. It must be done publicly and in daylight, and without the laying on of hands. Any upper classman can interfere if he thinks a Freshman is being abused, and by a word release him from his Sophomore teasers. "The Freshmen like it," I was told, and my informant added conscientiously, after a moment's reflection: "Not, perhaps, at the time, but afterward. It teaches them to know their place." Doubtless, but what is their place? Are they the playthings of those who have a year's advantage, or members of a democracy where all are free and equal? What sort of training for citizenship do they get by living for four years where the lines are so sharply drawn between the classes that a Freshman cannot cultivate a friendship with a Sophomore, or a Sophomore with a Junior, without being suspected of improper motives, and where a man has to be careful from the start to be seen always with the right set, or he will be shut out from an upper-class club, and so practically shut out from university life?

These clubs are institutions peculiar to Princeton, which

thought to get rid of the Greek fraternity evil by making all students sign the following pledge: —

"We, the undersigned, do individually for ourselves promise, without any mental reservation, that we will have no connection whatever with any secret society, nor be present at the meetings of any secret society in this or any other institution so long as we are members of Princeton University, it being understood that this promise has no reference to the American Whig and Cliosophic Societies. We also declare that we regard ourselves bound to keep this promise and on no account whatever to violate it."

But the clubs that have grown up are as luxurious, engrossing, and exclusive as fraternities. They are, however, different in some important respects. A student, not at Princeton, explained to me the essential distinction, and I will quote his words because they show an admirable mastery of the language: "You see, the frats eat you and sleep you; the Princeton clubs eat you, but don't sleep you; and the Harvard clubs don't do either."

Rather than give the opinion of an outsider on the club question, I will quote from the well-considered and recent report made by the Committee on Clubs to the Board of Trustees. The committee does not regard the clubs as unduly expensive and conducive to dissipation, or, on the whole, discouraging to study, although it finds that the clubs have a smaller proportion of honor men of the first and second groups than the non-club students; but the following evils incidental to the development of the clubs are pointed out: —

"First, the demoralizing struggle which engrosses the lower-class men to secure election to a club; secondly, their isolation from the upper-class men through the operation of an elaborate and highly technical inter-club treaty which creates artificial barriers between the classes; thirdly, the discouragement of the higher scholarship among the lower classes through their conviction that scholarship is valueless and extra-curriculum activities of paramount importance in securing a club election; and fourthly, the cutting off of the non-club men from the best social life of the university."

In 1909 the "hat lines," which were virtually Sophomore clubs working for specific upper-class clubs, were abolished. Dining halls have been provided for the Freshmen and Sophomores, where they all eat in common, but in selected groups at separate tables. The tendency, therefore, is toward the reorganization of the university life in a way similar to that advocated by President Wilson, that is, a separation into companionable groups, not too large for acquaintance, not so small as to be cliques.

The aim of Princeton is homogeneity. Harvard's ideal is diversity. The Harvard students are gathered from all over the world, admitted under all sorts of conditions, and given the most diversified training. A State university, although in a way more local in its constituency, cuts a slice down all the way through its particular jelly cake, taking in part of every layer, except sometimes a bit of the frosting falls off. But Princeton practically offers one particular kind of college training to one rather limited social class of the United States. Its entrance requirements, which are high, narrow in scope, and exclusively by examination, its tuition fees and expensiveness, its limited range of election, its lack of professional schools, its rules and customs, its life, traditions, and atmosphere, shut out or fail to attract the vast majority of potential students.

In the first place half the human race is excluded on the ground of sex, a congenital defect for which they are not in the least to blame. Princeton is the only one of these fourteen great universities which does not in some way provide for the educational needs of women. Negroes also are shut out by reason of their race, another injustice in which Princeton is unique among the universities. Nothing is said about this in the catalogue, but I think I am safe in saying that if a negro, presuming upon this omission, should present himself for entrance he would be so strongly advised

to go elsewhere that he would go.[1] Princeton has no share in the international movement which is sweeping over the country. Harvard, Yale, and Cornell have twenty-five or more Chinese apiece, but only one has Princeton. The Princeton students, I believe, support some of their graduates as missionaries among the Chinese, but apparently they do not like to have them around. There are twenty-three Japanese in Columbia; one at Princeton, in the graduate school. Cornell has thirty-three students from South America; Pennsylvania has thirty-eight; only one at Princeton, and he has an English name. The Christian tradition of Princeton, the exclusiveness of the upper-class clubs, and the prejudices of the students keep away many Jews, although not all — there are eleven in the Freshman class. Anti-Semitic feeling seemed to me more dominant at Princeton than at any of the other universities I visited. "If the Jews once got in," I was told, "they would ruin Princeton as they have Columbia and Pennsylvania." Sixty-six per cent of the students of Princeton come from the three States of New York, Pennsylvania, and New Jersey.

That there are certain educational advantages derivable from association with a greater diversity of students than obtains at Princeton is undeniable, but it is also true that the university avoids some evils and difficulties by thus limiting its field, and is able to do with a homogeneous body of students many things that are impossible to a city or State university. I have talked about some of them, but I must mention another, because it is one of the institutions of which Princeton is most justly proud, that is, the honor system.

The "honor system" must not be confused with the "honors system," although there seems to be more connec-

[1] Yet it was to Princeton that the founders of Liberia were sent to be educated. But that was in 1776, and many things have changed since then.

tion between the two words at Princeton than elsewhere. At Harvard I saw a crowd of students going into a large hall, and following them in, I found I could not get out, that no one was allowed to leave the examination room for twenty minutes. The students were insulated, the carefully protected papers distributed, and guards walked up and down the aisles with their eyes rolling like the search lights of a steamer in a fog. Nothing like this at Princeton; the students are on their honor not to cheat, and they do not, or but rarely. Each entering class is instructed by the Seniors into the Princeton code of honor, which requires any student seeing another receiving or giving assistance on examination to report him for a trial by his peers of the student body. In all universities it is customary to trust certain classes, but in no other of the fourteen did I find so complete a reliance on student honesty. I do not think the plan would be practicable in the long run with a very large and heterogeneous collection of students. It is probable that Princeton will lose this with some other fine features of its student life as the university grows and becomes more cosmopolitan. The semi-monastic seclusion of the country village cannot be long maintained. There is as yet only one branch railroad leading to it, but the automobile and the trolley have brought near to it the distractions of New York and Philadelphia, and those of Trenton nearer still. In spite of those alumni who think that Princeton ought to remain a college just as they left it, like a museum specimen in a sealed glass jar; who call the P.G.'s "hangers-on" and "Seminoles"; who talk of "the crime of '96," when East College was removed to make room for the new library, Princeton is bound to expand and take a more active part in the business of what some university men are fond of calling "the extramural world."

The metamorphosis of Princeton from a college into a university can be seen best in its buildings. They say

that the new buildings under construction in 1908 represented an expenditure of nearly $2,000,000. That is not so remarkable as the fact that the campus was improved by them. I know of universities where every new building, no matter how much it costs, makes the campus look worse. I have seen buildings where the architect seemed to have had a spite against the men who were to occupy them, and where the men who occupied them certainly had a spite against the architect. But the new Princeton buildings are both artistic and inhabitable. They are harmonious and yet individually interesting. As soon as you turn your back on the little railroad station there is a noble arch in front of you that invites inspection and entrance. On each side of it, fencing in the campus, is a long, irregular line of dormitories, stretching from the gymnasium up the hill to the corner where a tower, 140 feet high, is to crown the group; low, comfortable-looking residences they are, with separate entries, each leading to a few rooms. I do not know exactly what the architecture is, but I should call it the Cosy Gothic Style. On a secluded part of the campus, or at a distance from it,[1] is to be a similar group of dormito-

[1] Princeton, even more than Yale, is suffering from growing pains. A lively and indeed acrimonious discussion is now (May, 1910) going on among the alumni over the question of the place of the graduate school in the university. An offer of $500,000 for the endowment of the school made by William Cooper Proctor, '83, was afterwards withdrawn because of the objections raised to it on the ground that the proposed site, on the golf links, involved the isolation of the graduates from the other students. With the best of intentions to take a partisan attitude on this question, I must confess that I have not been able to determine which side I am on, or even what the fuss is all about. Princeton does indeed need the presence of a large body of graduate students to counteract its excessive juvenility, but the right kind of students will walk as far to do laboratory work as to play golf, and the right kind of professors will draw graduate students to Princeton, even if they have to live together and dine in state every night at the High Table. The Wyman bequest of $4,000,000 or more will now enable Princeton to establish a graduate school satisfactory to all concerned.

ries, these for graduates, with cloistered courts, unprofaned by undergraduate feet and noises, and a Fellows' garden wherein may walk in the cool of the evening the graduate students, discoursing, if they would not shock the architecture, on themes no less lofty than those

> "Of Providence, Foreknowledge, Will and Fate,
> Fixed fate, free will, foreknowledge absolute."

The new physical and biological laboratories are monumental refutations of the common opinion, founded unfortunately on common experience, that buildings cannot be both beautiful and commodious. These buildings are designed from the inside. They are fitted to their purposes, to the preceptorial system, to the combined lecture-laboratory, to the unit table and tray. Scientific men in other institutions, who are housed like hermit crabs in shells that do not fit them, will appreciate the advantages of having an architect who considers the purposes of his edifice.

In this visible form President Wilson is working out his ideal of the American university, an ideal which is best expressed in his own words: —

"Our colleges should conceive of themselves as organizations into which young men are received as into a family of free persons bound together by common obligations and common privileges, living together, teacher and pupil, in an intercourse of common advantage; its main object study; its diversions diversions, not occupations; its sport sport, not competitive business; its society a free society of equals, not a congeries of rival social groups."

ENROLLMENT OF STUDENTS IN PRINCETON UNIVERSITY, 1888–1910.

Year	Graduate Students	Academic	Scientific	Elec. Eng.	Specials	Qualify Students	Total
1888–89	93	463	111	—	—	—	667
1889–90	118	455	111	—	87	—	771
1890–91	101	504	145	10	90	—	850
1891–92	112	604	245	19	—	—	980
1892–93	115	647	296	14	—	—	1072
1893–94	109	640	321	22	—	—	1092
1894–95	117	598	382	12	—	—	1109
1895–96	126	574	381	7	—	—	1088
1896–97	123	548	364	10	—	—	1045
1897–98	125	580	354	6	—	—	1065
1898–99	128	633	334	4	—	—	1090
1899–00	141	686	363	4	—	—	1194
1900–01	109	749	412	7	—	—	1277
1901–02	117	760	472	5	—	—	1354
1902–03	124	754	498	7	—	—	1383
1903–04	114	721	589	7	—	—	1431
1904–05	91	659	616	8	—	—	1374
1905–06	105	710	561	8	—	—	1384
1906–07	112	694	471	6	27	37	1347
1907–08	113	647	470	5	11	55	1301
1908–09	91	625	523	10	4	61	1314
1909–10	134	627	537	13	5	84	1400

In the years 1889–90 and 1891–92 and since 1906–07 the specials are not classified as between academic and scientific. In the other years above the numbers under "academic" and "scientific" include "specials." Since 1906–07, also, there is a new classification of "students qualifying for regular standing," who differ from "specials" in that they are candidates for degrees, while the "specials" are not.

CHAPTER IV

LELAND STANFORD JUNIOR UNIVERSITY

NOW that Stanford University is completing her eighteenth year we may regard her as having attained her majority, so she is to be judged, like her sister universities, by attainments instead of promises. It is necessary to adopt this point of view at the outset, in fairness to Stanford, for, like all grown-up infant prodigies, she suffers from a persistence of the implied claim on the public for admiration and indulgence on the score of youthfulness. It is better therefore to make her acquaintance without an introduction, without hearing the gossip about her beauty, wealth, and romantic origin, because then it is more likely to be a case of love at first sight.

About Stanford University the general public has heard too much and knows too little for fair appreciation. We all of us have a rather definite conception of Yale and Princeton before we see them, and if, when we do see them, we are disappointed, it is in the same way that we are disappointed at Niagara Falls and Cologne Cathedral, because they are too much like what we expected them to be. But Stanford is so apt to be unlike one's preconceived notion of it that it is better not to acquire one. Therefore I would advise those who intend to visit Stanford not to read about it. The following is written solely for those who have been there or do not anticipate going there. For the most favorable impression, in fact, the stranger should approach it without even knowing there is a university there. We may imagine the stranger getting off the train at Palo Alto because the name took his fancy, and then turning his back

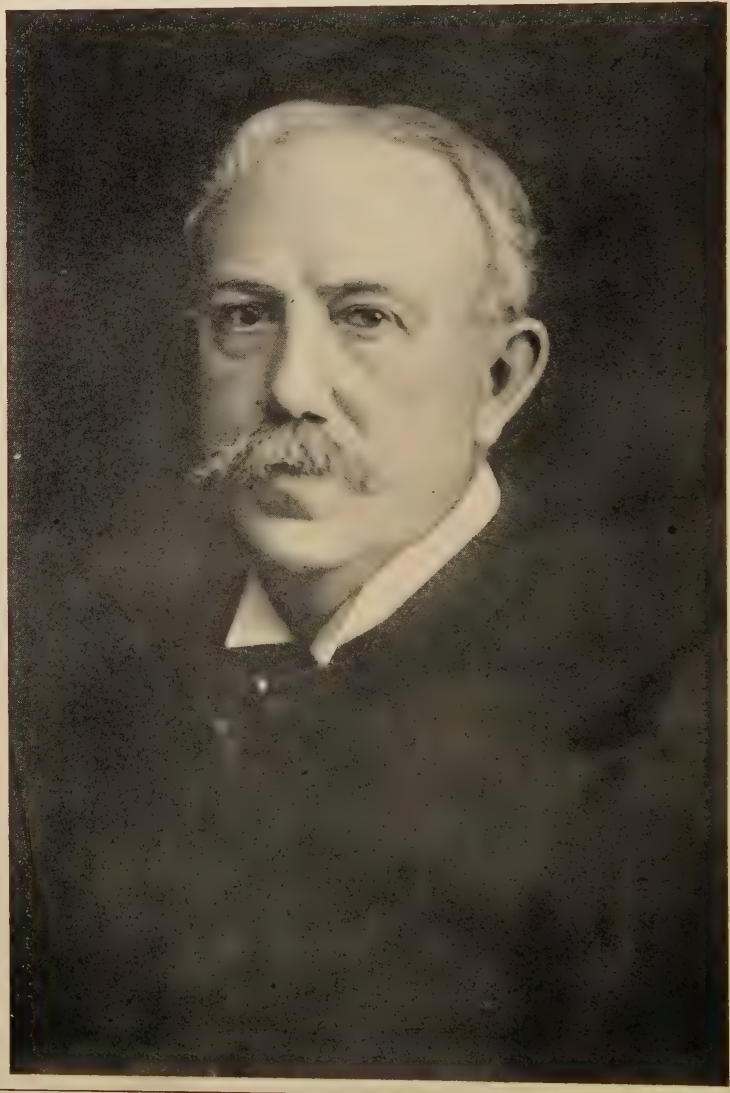
on the town and striking out for the tall timber, westward of the track, to see if the name be justified. Straight into the woods the road goes, straight toward the mountains, beyond which is the sea. If the stranger be a New Yorker, it is advisable for him to take one of the carriages offered him at the station on account of the pleasurable shock that he will receive when he comes to pay for it. The other alternative is to walk, for no trolley or automobile is allowed to profane the favorite drive of a lover of fine horses. It is better to walk, anyway, for it gives one the sense of adventure, this penetrating into an unknown world, unlike anything he has seen elsewhere, least of all like any other university. Certainly the young men in corduroys and sombreros walking past him with a loping Western gait do not remind him of the college seniors he has known. Even the trees that hedge in the road on either side look strange and semitropical, and he can only guess at the names of some of them: giant eucalypti, with tattered raiment hanging from their naked limbs; date and fan palms alternating; twisted live oaks on the foothills, and on the distant ridge a fringe of tall separate trees altogether out of proportion and spoiling the perspective. If he wanders to the right, he gets into a cactus maze and comes to a mausoleum. If he turns to the left, he finds a rough redwood building like a hunting lodge, and in the clearing around it men and boys are playing tennis or baseball. It does not look at all like the Colonial Club, of Cambridge, or the Nassau Club, of Princeton, so he does not suspect its purpose. Just beyond is an empty dome suspended like Brunelleschi's in air, the building beneath it having vanished. Finally, straight ahead he sees across a lawn and flower beds a long low arcade, a line of buff sandstone buildings surmounted by red tiled roofing, a church top and a factory chimney in curious juxtaposition; bronze and marble statuary, modern and ancient, realistic and symbolic; façades covered with mosiacs

glowing in the sun, in accord with the colors of the tropical plants, the foothills, and the sky, and all with an indescribable air of peace, of spaciousness, of leisure, of freedom, an air of the farm and the frontier, anything but an academic air. The stranger might take it for the hacienda of some lordly Spaniard of artistic ambitions, or for the retreat of some new religious sect, or for a socialistic community designed by William Morris, but not for a university, least of all a school of modern science and engineering.

The mere sight of Stanford University is broadening to the mind, because its aspect is symbolic of its break with traditionalism. One of the reasons why the word "academic" is coming to be an opprobrious epithet is because it is associated in the popular mind with peaked windows and gargoyles. The Gothic tradition is commonly defended because it indicates the descent of the modern college from the medieval cloister. But the Stanford style also preserves this hint of ecclesiastical ancestry. It only taps the stream of Christian architecture nearer its source, getting its inspiration direct from Rome and Byzantium. It is a branch that has kept the southern course, not the roundabout route through the foggy lands of northwestern Europe.

But Stanford hardly fulfills the promise of its unconventional architecture and environment. The visitor feels disappointed when he enters one of the buildings and finds teachers and pupils going through the same old lessons in the same old way as everywhere else, when there are so many different things needing to be taught and so many different ways of teaching them. It shows the power of educational heredity, that a university unique in its origin should grow up to be so much like its older sisters.

Stanford University during its formative period was free from most of the restraints of other institutions. Unlike the State universities it was not subject to the caprices of a legislature or bound by its duty toward all the people of a



DAVID STARR JORDAN,
President of Leland Stanford Jr. University.

certain district. It was held by no dead hands of charters, testaments, and traditions. It had no alumni body to dominate it. It was not dependent upon the fees of students, for it gave them all and asked of them nothing. It was not cramped into a few city blocks; it had an 894-acre campus to grow in. It had a larger free endowment than any other university ever had. The ideas of the founders were on the whole liberal and progressive. They selected as president a man of powerful personality, with independent and radical views on education, and gave him an amount of authority unprecedented even among American college presidents.

But President Jordan did not create a university in his own image. Whether it was because as an evolutionist he did not believe in that mode of creation, or whether as an advocate of freedom and individualism he was reluctant to make use of the necessary means to mold things in accordance with his personal ideals; or whether he found his material, his financial, professorial, student, and climatic material, too intractable to be so molded, it would be presumptuous for me to guess. One would have a fairly correct idea of Harvard from seeing and hearing President Eliot, or of Columbia from President Butler, or of Johns Hopkins from President Remsen, but he would not get acquainted with Stanford University by attending a commencement or inauguration at which President Jordan was the chief speaker. It is necessary to call attention to this because the number of those who have visited the university are few compared with those who know its president. To take a few examples, President Jordan is much in demand all over the country as a lecturer. He has the ability and inclination, both rare among scientific investigators, to write books and magazine articles in a popular style on timely topics. He is even capable of dropping into poetry in a friendly way. Stanford University, on the contrary, has no exten-

sion department, gives no popular lecture courses, and is not remarkable for its literary productivity. President Jordan has done a good deal of public service both at home and abroad; for example, by his work on the Fish and Seal Commissions. His faculty do little public work in comparison with the State university faculties, and they are prohibited from engaging in outside occupations, such as establishing private offices or seeking practice, lest they should neglect their teaching. It is hard enough to get first-class men in engineering even when they are allowed to carry on professional work, and this is in most schools regarded as rather an advantage, because it keeps them efficient and up to date. And finally, President Jordan is an earnest advocate of the importance of original research, and he backs up his preaching by his example. No other university president of those here considered has, I believe, done as much scientific investigation while in the office. It is by this test that he would have a university judged.[1] Now I realize that I am incompetent to judge Stanford or any other university by this criterion. The evaluation of contemporary contributions to knowledge is the most delicate and difficult as it is the most important of critical tasks. The Nobel Prize Committees find it necessary to spend about half their income every year in determining who are worthy to receive the other half. And they only take into consideration five departments of human progress.

Still, having begun by expressing my personal opinions on the question of productive scholarship, I suppose I must in fairness continue to express them, however valueless or misleading they may be. So I will say that I was disappointed in not finding Stanford University so superior to the others in this respect as I had expected it to be. I had assumed that the president would have chosen his faculty primarily for their ability as investigators, for

[1] "University Building," *Pop. Sci. Mon.*, 61, p. 330.

although he has never underestimated the value of good teaching, he has always insisted that the best work in instruction could only be done by those who were zealously engaged in the advancement of human knowledge. Then, too, I remembered Professor William James's opinion of Stanford,[1] that "the advantages of the place for steady mental work are unparalleled." It had seemed to me that the men at Stanford, being in receipt of a comfortable income, — the salaries of the professors there average $3735, higher than anywhere else except Columbia and Harvard; not overburdened by the number of students; protected from the cares of outside business; fairly well supplied with library and laboratory facilities; unhampered by lack of room; not obliged to stump the State for the purpose of drumming up students or to make "grand-stand plays" for the benefit of the Legislature; living in a quiet country place, having easy access to a large city, but untroubled by its noise, distractions, and obligations; situated in a region of exceptional beauty and enjoying an equable climate throughout the year: men in such an environment were, it seemed to me, deprived of most of the excuses which I had heard alleged at other institutions to explain why their literary and scientific productions are not more numerous or of a higher order. This unfortunate deprivation subjects the faculty of Stanford to criticism because their achievements in these lines are not so superior to other universities as their presumed advantages are greater, a criticism which is doubtless somewhat unjust because the conditions to which I have referred are, after all, probably not the determining factors in scholarly productivity anywhere.

Then, again, the professors at Stanford are at something of a disadvantage in not being judged by their own achievements, but are naturally compared with the first faculties

[1] "Stanford's Ideal Destiny," *Science*, May 23, 1906.

of two other universities similarly founded within our memory, Johns Hopkins and Chicago. But it should be remembered that the unique group of men whom President Gilman gathered around him in the seventies was not at that time any more distinguished than the Stanford faculty is now. The University of Chicago was started about the same time as Stanford University, but Presidents Harper and Jordan adopted opposite policies. President Harper, although he had a much smaller endowment, paid unprecedentedly high prices for men of established reputation in Europe and America, regardless of age, race, color, or previous condition of servitude; "headliners," we used to call them. President Jordan, on the contrary, selected young men of promise, mostly those he had personally known in Cornell and Indiana. This difference in policy was, no doubt, dictated by circumstances. The pull of the great city is felt as strongly in university circles as elsewhere, and to Eastern professors, who thought they were making a great sacrifice in going to a frontier town like Chicago, residence on a California ranch was unthinkable. President Jordan is popularly reputed to choose his men "by intuition." If this is the case, it seems to work as satisfactorily on the whole as a more scientific process of selection, for he has made few mistakes, considering the uncertainty of all forms of dealing in futures.

Stanford used to have the youngest faculty of any university in the country. Now the average age of its professors, 45.8 years, is a little above the average of Princeton, 45.4, and Columbia, 45.5. Curiously enough its only rival on the Pacific coast has the oldest faculty of any of the leading universities, 51.6 years.[1]

In many other ways the two great California universities are in contrast. The University of California has a long list of humanistic, scientific, and technical publications.

[1] Carnegie Foundation Bull., No. 2.

It extends its influence throughout the State by means of lecture courses. It is closely connected with the public school systems. Its summer school is large and prosperous. It sends abroad archæological and scientific expeditions. It has been an important factor in the remarkable agricultural development of California. And, in addition to all this, it takes care of twice as many students as Stanford, although its income is less than the gross income of the Stanford property.[1]

President Jordan, with a frankness characteristic of him but rare in college presidents, admits that the State University "has already gone much further in the realization of the ideals of Governor Stanford" in regard to graduate and technical work "than Stanford University has yet gone." [2]

The future development of Stanford will be in the increase of university as distinguished from collegiate work. The foundations have now been laid, and laid broad enough, for a high superstructure. The faculty have been given clearly to understand that a young man stands no chance of promotion to an associate or full professorship without clear evidence of the power and disposition to carry on independent investigation or advanced studies of similar nature which will tend to make him an authority in some branch of his subject. Skill as a teacher, helpful personality, executive ability, or long service, though taken into consideration, are not held to justify promotion above the grade of assistant professor without thorough and therefore productive scholarship. If this policy is consistently enforced, it will gradually transform the spirit of the university and will tend to divide the faculty into two classes, collegiate and university, the men whose chief ability lies in teaching

[1] I am using the figures given in the Annual Report of the Carnegie Foundation.

[2] Fourth Annual Report, p. 21.

being in the former class and the men who are preëminently investigators in the second.

This will pave the way for the next step which President Jordan regards as essential in the development of the true American university; that is, the separation from it of the Junior college, as the Freshman and Sophomore years have come to be called. I quote from the most recent public expression of his views:[1] —

"The American universities are not yet universities. They are destined to become such, but not until as a first step the first two years the students and the teachers of the Junior college are relegated to the high school or the college. To abolish the president, or to cut off his salary, to change his powers materially, or to find some other type of man, would not affect the case materially, so long as the teaching of boys is regarded as university business. This is college business. The college is a coöperating organism far more than the sum of all its parts. It has moral duties, more vital than its duties to research. So long as the institution tries to carry this double function of college and university in the same buildings, with the same staff, the present difficulties must persist. In this same period we must bear the double criticism that our professors do not do their part in the advancement of science, and on the other hand that they talk too much of research and give too little attention to mental drill and to the moral and social development of boys under their charge. But in any case half our academic staff are in the nature of things shut out from *Lehrfreiheit* as half the students are not ready to attach any real meaning to *Lernfreiheit.*

There is much to indicate that President Jordan is right in regarding this as the true line of evolution. The professional schools of all kinds are demanding one, two, or three years of collegiate work for entrance; most of them seem likely to settle on two. In almost every university there is detectible some hint that here is a natural dividing line. It is coming to be generally agreed that Freshmen and Sopho-

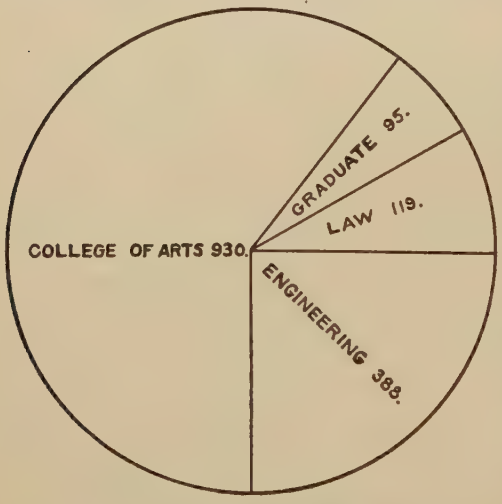
[1] "The American University and the College President," *The Independent*, Nov. 5, 1908.

mores require a different sort of training from Juniors and Seniors. The only question, therefore, is whether they cannot get this better in different institutions than together. It causes no end of trouble to attempt to keep a part of the student body under a different disciplinary régime from the rest. Does a boy get a chance for personal development in a crowd of two thousand or five thousand — it will soon be ten thousand in some places — other boys? There can be but one president of a class, but one editor in chief of the daily, but one champion orator, but one speediest sprinter, and but one star pitcher, however numerous the students. Consequently, the crowd on the bleachers gets bigger year by year.

Segregated in colleges of, say, two hundred to five hundred, they would receive more individual attention and would be less liable to be infected with the mob spirit. They would be under the instruction of men who were primarily teachers by temperament and training, instead of men who regarded students as thieves of their time and so hindrances to their advancement. The position of a professor in a Junior college would be one of more dignity and as much salary as if he were in a large university, where he would be overshadowed and regarded as a failure because he did not neglect the important work which he is especially qualified to do in order to attempt what others can do better. Each great university would have a dozen or so of affiliated Junior colleges in various parts of the country, preferably outside the large cities, each with a faculty of about thirty and a library of about 30,000, competent to prepare for one or more professional schools. These small colleges would have an opportunity of trying new methods of education impossible under present conditions, and they could adopt such restrictions and discipline as they thought best without being charged with narrowness or sectarianism.

Whether this is the ultimate solution of the problem of

the undergraduate, or, if it is, whether the time has come for it, are questions that can only be decided by experiment, and for trying this experiment no other university is so favorably situated as Stanford. The State universities must wait upon the high schools. The other endowed universities would lose a large part of their revenue if they dropped the two lower classes. But Stanford, requiring no tuition, would save money by it. The high schools of California are enterprising and already look forward to adding a fifth and sixth year to their course. There are some religious colleges of high standing in the State, and their influence would be extended by such an arrangement. Then, too, the Stanford estate is large enough so that a model Junior college could be established upon it seven or eight miles away from the university, this being one way of overcoming the greatest difficulty now in the way, the lack of adequate preparatory (Junior college) schools in California.



THE DISTRIBUTION OF STUDENTS AT STANFORD, 1908.

At present President Jordan has against him faculty, trustees, and alumni, but presidents have been known to overcome such obstacles as these. In the interests of American educational progress it is to be hoped that he will have an opportunity to carry out his plan, for such experimental evidence as we have is ambiguous. It was projected by

President Harper and abandoned, but I am not sure that this was due to any inherent defect in the plan. Johns Hopkins, which was started with substantially this idea, and for thirty years had only three years of undergraduate work, has lately been forced, in self-preservation, to add a fourth or Freshman year. Plans for drawing a clear dividing line in the middle of the college course were thoroughly discussed in Columbia University six years ago,[1] but the question was not considered purely on its merits because the suggestion that the bachelor's degree be given at the end of the first two years introduced an unnecessary and exciting complication into the discussion. President Jordan calls attention to the fact that the degree of "Associate in Arts" is granted at this point in the University of Chicago, but he does not attempt to decide what would become of the bachelor's degree in such a rearrangement; I presume because he does not care, judging by what he has written on this subject:[2]—

"The college degree is an incident in scholarship, a childish toy, so far as the real function of building up men is concerned. Prizes, honors, badges, and degrees, — all these have no necessary place in the machinery of higher education. If our universities had grown up in response to the needs of the people, not in imitation of the colleges of England, we should never have been vexed by these things, and never felt any need of them."

He would find more persons to agree with him now than at the time these words were written, for in the present reorganization of collegiate courses, in accordance with the demand for higher professional education, the traditional system of degrees is breaking down all along the line.

Stanford is distinguished from other universities in that it does not want more students. It has all the women its charter allows it to have, five hundred, and it has nearly all the men it can do justice to with present funds and

[1] See *Columbia University Quarterly*, March, 1903.
[2] "University Tendencies," *Pop. Sci. Mon.*, 63, p. 141.

equipment; that is, about a thousand. It is therefore in a unique position to dictate what students shall enjoy its advantages. It has a waiting list of women and will soon have a waiting list of men. It will then be able to pick out its students, like colts for the Derby, years before they are qualified to enter and to watch their progress and tendencies in the preparatory school.[1]

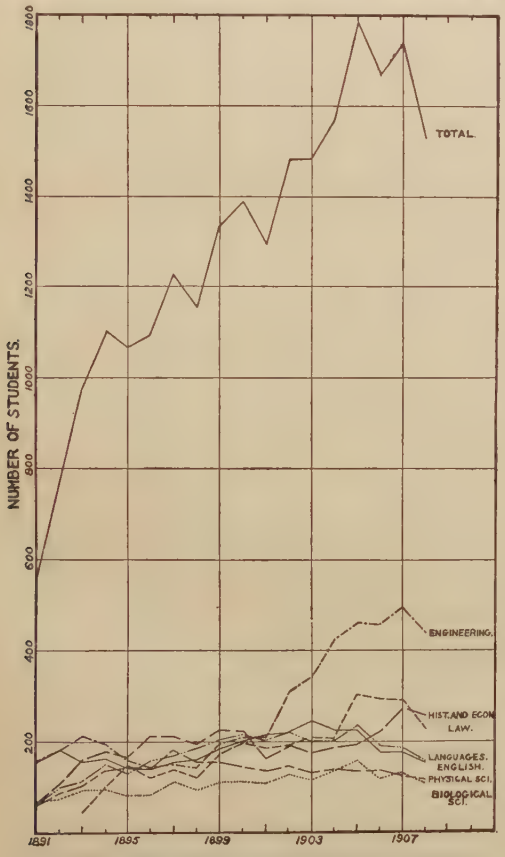
Now that Stanford is practically full, I cannot refrain from quoting what was said about it, when it was founded, by the New York *Mail and Express*, for it is delightfully characteristic of the Eastern attitude toward Western education: —

"It is about as much needed as an asylum for decayed sea captains is needed in Switzerland. The professors for years will lecture in marble halls to empty benches."

Since the aim of the Stanford authorities is to get only the best quality of students, it is interesting to see what kind of a system of selection they are working out and applying. We may most conveniently compare its sifting process with that of Princeton, for these two institutions are most nearly alike in being endowed, mainly collegiate and situated in the country not far from large cities. They are of nearly the same size and more concerned with getting better students than more of them. Princeton practically excludes from the university: (1) persons who have not studied Latin; (2) who have not $150 in cash above living expenses; (3) who did not answer a certain proportion of questions on certain subjects on certain days; and (4) who do not belong to a particular race or sex. Stanford, with the same object in view, namely, the elimination of the unworthy, does not apply a single one of these restrictions — much more than half of its students would be cut out if they all were applied; but it has a very different set of rules of admission,

[1] For the advantages of such a waiting list to a university see Birdseye's, "The Reorganization of our Colleges."

which, if applied to Princeton, would materially reduce its attendance, I would not venture to say how much. The Stanford Committee on Admission is expected by the Academic Council to exclude, as far as possible, three classes of applicants: —



THE NUMBER OF STUDENTS AT STANFORD UNIVERSITY SINCE ITS OPENING.

(1) Persons of mediocre ability, who give no positive promise of becoming genuine students.

(2) Persons of good ability, but not mature or serious-minded, and not likely to make good university students.

(3) Persons of doubtful character, or frivolous disposition, or whose interests are likely to be absorbed by society, athletics, etc.

(4) Persons who use intoxicating liquor.

It is not desirable to decide *à priori* which of these is the better way. The question of the proper methods of selection is so unsettled that it is a good thing to have these two tests of quite different methods running at the same time. There are also other institutions which do not believe in such strict selection in either of these forms. President Eliot does not object to the presence of "the leisure class" in the university. The State

universities are obliged to admit all comers who comply with certain minimum requirements, even though it is well known in advance that they are "not likely to make good university students."

Having decided on the particular kind of students it wants, Stanford is now gradually working out its methods for finding them wherever they may be. It has practically discarded the formal examination as an admission test. For the last two years only 3 per cent of the matriculates have been admitted by examination. The wisdom of this is quite generally conceded, for comparatively few American universities now rely entirely on admission examinations. I have heard insurance men say that their company would do better if it made out a policy for every man who passed the office window on the street during the day than if it took only those passing the medical examination, and I have heard university men make similar remarks about entrance examinations. Stanford from the first abandoned the attempt to dictate the course of the secondary school, and now regards its seventeen years of experience with this policy as having proved satisfactory. No particular subject or correlation of subjects is required for entrance. Any high school course of four years is accepted, provided the work has been well done and includes the studies necessarily preparatory to the course which is to be taken in the university. This is another radical concession to the tendency of the times. It is a frank recognition of the right of the secondary schools to adopt their own methods of education, a right which they are beginning to claim all over the country and soon will be able to establish and enforce.

Thirdly, Stanford is losing faith in the certificate system on which the State universities rely. It does not find that the diploma of an accredited high school, even accompanied by a perfunctory recommendation from the principal,

insures the proper kind of intrants. The Admission Committee is continually asking for fuller details of the life, work, intentions, and disposition of potential students. It may in time come to the point of taking as much pains in searching out a good scholar and getting him into the university as a fraternity does in discovering a congenial brother or the athletic manager a future fullback.

The Admission Committee has not yet constructed the new machinery to replace that which it has sent to the scrap-heap, but it evidently has a clear and somewhat original idea and will eventually develop it in a practical form.

But after the student is admitted to Stanford he is not, as in some of the Eastern universities, foreordained and predestinated to be graduated. The most rigid part of the process of selection is yet before him, a struggle for existence presumably resulting in a survival of the fittest. This is what is called by the students "the flunking-out system." The Stanford ideal is the earnest, hardworking, and efficient student. The university has no use for the boy who comes to enjoy a congenial club life, nor for the girl who strolls up to the campus at 12 dressed in her prettiest to take drawing. Delinquent scholarship brings suspension at the end of the semester. In thus continually weeding out its students Stanford resembles West Point, but on the other hand it resembles Harvard in throwing upon the individual student the entire responsibility for attending to his daily duties. Stanford therefore attempts to combine characteristic features of "the college of discipline and the college of freedom," as President Pritchett calls them. Theoretically, the combination is an ideal one; practically, I am not sure that it works well.

Since we human beings cannot acquire the impersonal imperturbability of Nature, we cannot altogether imitate her process of selection. We have to take into consideration those who are dropped and go home in disgrace or discour-

agement, their college career interrupted and perhaps abandoned. And it is not at all certain that there is not some good material among those culls, some who might have been saved if they had a little more personal attention, perhaps a friendly word of warning at the right moment against idleness or dissipation. The new machinery of admission being, as I have said, not yet perfected, some students get in unprepared and are flunked out in spite of the hardest kind of work. The faculty at Stanford are not in as close touch with the students as they should be. An effort is now being made to rectify this fault of lack of personal attention by the appointment of an adviser to look after the first-year students. This will undoubtedly do good if he is the right sort of a man, but I think it would be still better if every member of the faculty would make himself the "adviser" of a small group. I know some are doing this at Stanford, and I know, too, that their efforts are appreciated by their boys.

We might afford to disregard the fates of the dropped ones if it were evident that the flunking-out process resulted on the whole in a superior class of students. I was not able to convince myself that it does. I am not at all sure that the students at Stanford are as a whole superior in earnestness and enthusiasm to the students at the State university. This, of course, is merely a personal impression and may be altogether wrong. It must be remembered, too, that the University of California also is much more ruthless in flunking-out than most Eastern universities. But seclusion is traditionally supposed to be conducive to scholarly pursuits, so the students as well as the faculty at Stanford would be expected to be more studious than in the suburb of a great city, and one is naturally disappointed to find no marked difference in their favor. There is about the same number of hard-working boys from the farms and small towns in each institution; but in the University of

California there are besides some fifteen hundred from San Francisco and neighboring cities. Of course, among these are many good students, but as a whole the city element is very much inferior in earnestness to the element from outside.

In 1907–1908 the number of students suspended at Stanford for delinquent scholarship was 232, the record year in this respect. The comparison between the men and the women, and between the fraternity and nonfraternity students, as shown by the following table, is very instructive: —

	Total Number	Per Cent of Failures
Men	1186	18.3
Women	552	2.5
Fraternity men	323	28.0
Encina Hall (Nonfraternity men)	350	12.5
Men living in town	368	11.4
Sorority women	125	3.2
Roble Hall (Nonsorority women)	112	3.6
Women living in town	131	1.5

The percentage of failures among the students of both sexes living in the towns of Palo Alto and Mayfield is less than among those living on the campus. The relations shown by these figures are, I think, representative of American colleges elsewhere. I have not been able to get complete statistics, but I believe that the following rules will hold good generally and with comparatively few exceptions: —

First, that there are fewer failures in scholarship among women than among men;

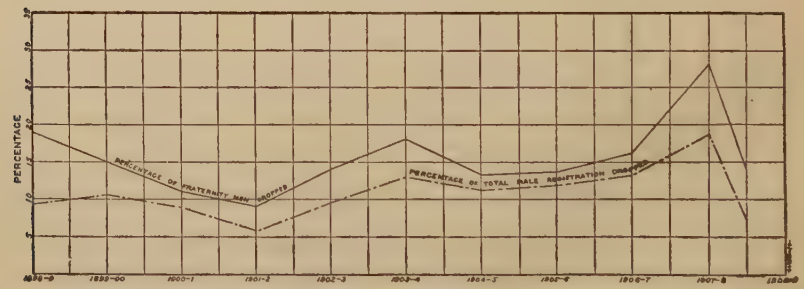
Second, that there are fewer failures in scholarship among nonfraternity than among fraternity men;

Third, that students may be classed according to scholarship by residence as (1) highest, those living at home;

(2) those living in other private houses; (3) those living in college dormitories; (4) lowest, those living in fraternity houses.

If the third rule is true, it ought to be taken into consideration by those who are urging the extension of the dormitory and fraternity system to include almost all of the students.

I have selected for the above table two groups of about the same size, the fraternity men living in the sixteen chapter houses on the campus, of whom 28 per cent were suspended last year, and the nonfraternity men living in Encina Hall, the college dormitory on the campus, of whom 12.5 per cent were suspended. Encina is a large and somewhat noisy building with long corridors, not divided into entries like the new dormitories of Pennsylvania and Princeton. The chapter houses on the other hand are more secluded and more comfortably fitted up. Yet it appears that a student who goes into a fraternity stands twice the chance of failure. That this state of affairs is not the accident of a single year is shown by the accompanying diagram, giving the complete



STUDENTS SUSPENDED FROM STANFORD UNIVERSITY, 1898–1908.

record of the percentage of men suspended for the last ten years. From this it appears that the delinquencies of fraternity men have always been greater than those of the men of the university as a whole. In round numbers about half of the men who have been suspended belonged to fraternities, although they have numbered only about a quarter of the



Leland Stanford Jr. University. Photograph by H. W. Simkins, Palo Alto.

THE UNIVERSITY DORMITORY FOR MEN.



Leland Stanford Jr. University. Photograph by H. W. Simkins, Palo Alto.

ARCADE AND EAST TOWER.

masculine student body. The line of the nonfraternity delinquencies would, of course, run considerably below the dotted line, and that of the feminine delinquents would hardly show on this scale. It would be well if every university would keep a continuous record of the scholarship, delinquencies, and nonpolitical honors and triumphs of each individual fraternity or similar group of students, and publish it in this graphical form. It would be much more interesting than the meteorological and seismographic records now kept, and might be equally useful in foretelling storms and earthquakes. Such published reports would strengthen the hands of those who are working to reform the fraternities from the inside. As it is now, a new student has no opportunity to learn the character and tendencies of the different fraternities. The rushing process does not enlighten him, and he is likely to join one quite uncongenial to his tastes and disadvantageous to his future.

The fraternity men might properly be expected to stand higher than the outsiders in scholarship and achievements, for they are probably on the average superior in natural ability and are more apt to come from wealthy and cultured homes. The fraternities naturally pick their men more for social qualities than anything else, so the brilliant and promising Freshmen are likely to be taken and the stupid and unprepossessing ones left. Many persons argue that the advantages of fraternity life more than compensate for the sacrifice of class-room work, but even they would hardly hold that this sacrifice ought to be carried so far as to involve separation from the university, as in the cases we are considering. Among these advantages one that is rightly held to be important is the opportunity for entering the society of the place.

In this connection it is curious to observe that joining a sorority makes no such difference to a young woman as joining a fraternity does to a young man. Comparing the

records of the women living in the six sorority houses on the campus with the nonsorority women living in the college dormitory, Roble Hall, we see they are practically identical (four tenths of a girl is a negligible quantity, surely). Yet the sororities, like the fraternities, are much more given to society than the Halls. One would think that the numerous social functions with the preliminary and subsequent conversations incident thereto would distract feminine attention from school work, but evidently they do not, at least not seriously enough to affect the record.

We are then driven to the conclusion that there is something about fraternity life, but absent from sorority life, that is antagonistic to scholarship and conducive to infractions of discipline. What this is, it would not be proper for me, not being a fraternity man, to guess. But this conclusion is distinctly encouraging, for it shows that the difficulty is not inherent in chapter-house residence or in active participation in social and other college affairs. It can, therefore, be removed without interference with the fraternity system, and those who believe that the fraternities are irremediable and must be abolished by the universities or the legislatures have not proved their case. That is, the sororities may save the fraternities. The feeling against secret societies in universities and high schools seems to me to have increased amazingly in the last few years all over the country, but it is not likely to injure them, for a movement has grown up inside the fraternities for the purpose of removing whatever rational ground there may be for objecting to them. The irrational prejudice against them is, of course, irremovable.

The problem of harmonizing predestination and free will, which absorbed the attention of medieval school men, is not so much discussed by the school men of to-day as the similar problem, more practical but almost as interminable, of how to secure continuity of study without infringing on individual liberty. Stanford has a different solution from

any of the three universities we have previously considered, the major subject system.[1] According to this system the student at entrance selects a department in which he is to carry at least one study for the four years; the rest of his work, two thirds or more of the total, is freely elected from term to term, subject to the approval of the head of the major department. This scheme, like the others, looks very pretty on paper, but works out in some curious ways in practice. The student is practically at the mercy of his major professor, and if he happens to be ambitious to build up his department, or narrow or prejudiced in his educational views, the student suffers. If the department is populous, the head professor has no time on registration days to look into the needs of the individual, and so signs cards as expeditiously as a Harvard adviser. The subordinate professors and instructors of a department are dependent for their students on the disposition of its head professor. Readers who are acquainted with faculty temperaments will see without explanation that this may cause difficulties. There are the usual questions as to the separation or combination of departments, such as whether those who teach hygiene or drawing are entitled to give major courses. Some major professors give their students complete freedom of election, others practically prescribe all their work. In the undifferentiated college the major system appears to work satisfactorily on the whole, but in the professional courses of law, medicine, and civil, mechanical, and mining engineering it breaks down entirely, and I see no reason why the attempt should be made to include these necessarily prescribed courses for the sake of purely formal consistency. For example, the new course in mining engineering requires seventeen hours' work a week for five years, besides summer

[1] For discussion of its workings in comparison with its rivals the fixed-group system, the group-elective system, and the free-elective system, see the Third Annual Report, pp. 71–89.

field work, and all of it is prescribed, even to the foreign language, which must be Spanish.

The medical department established in 1909 requires a combined course of seven years, three of collegiate work and four of medical, the A. B. degree being conferred incidentally when the student has completed his first year of the medical. The last five semesters are to be given in San Francisco, where the university has taken over the Cooper Medical College.

The character of the work done at Stanford is best shown by the accompanying table, which gives the classification of the students by major studies for every year since its foundation. It must be remembered that the numbers given do not represent the total number of students taking work in a particular department, but only those registered for a four years' continuous course in that department.

One interesting point not brought out in the table is the drift of the men and women toward diverse departments, characteristic of all free colleges. This is a natural and partial segregation due to real differences in the taste, ability, and needs of the two sexes, an entirely different thing from the segregation due to the arbitrary exclusion of women from certain classes or colleges in accordance with a masculine preconception of woman's sphere based on tradition, selfishness, or speculative psychology. Under free conditions such as prevail in the State universities and, except for the restriction of the number of the women, in Stanford, the women choose their studies as they choose their occupations in the industrial world, taking either whatever they can do best or whatever is the best they can do.

I quote from the last register the number of students of the class of 1907 electing major work in certain departments: —

	Men	Women
Greek	0	1
Latin	1	18
German	4	16
Romance	0	8
English	2	18
Mathematics	1	5
Law	30	1
Engineering	44	0

According to this, the studies in which women excel are the languages and mathematics, while the men take mostly to law, engineering, and, we may anticipate, medicine. The fact that in the humanistic departments, in which the women predominate, the work is easier than in the technological course, accounts in part for their fewer failures. With both sexes, of course, the occupational motive is influential in the choice. In such subjects as history and zoölogy the classes are more evenly divided. The tendencies shown in Stanford are, I think, to be observed in coeducational institutions generally.

The objection is sometimes raised in other institutions that a large predominance of one sex tends to banish the other, or, as it is sometimes very amusingly put, the women "crowd out" the men from the classical classrooms. Doubtless there is something in this, but it is not worthy of consideration. There are students, as we all know, who will refuse to enter a class which contains, for example, a negro, a woman, a Jew, a Japanese, or some person whom they individually dislike, but it does not matter at all what such students take. No university can hope to do much for a person of such weak purpose and strong prejudices as to be deterred from taking a course that he or she needs or wants because it contains too many of the opposite sex.

Senator Stanford's educational ideals were fair and broad-minded in this respect as in others: —

"We have provided in the articles of endowment that the education of the sexes shall be equal — deeming it of especial importance that those who are to be the mothers of a future generation shall be fitted to mold and direct the infant mind at its most critical period."

And again: —

"We deem it of the first importance that the education of both sexes shall be equally full and complete, varied only as nature dictates. The rights of one sex, political or otherwise, are the same as those of the other sex, and this equality of rights ought to be fully recognized."

In the hurry of the opening the university authorities took pains to have Roble Hall occupied on the same day as Encina Hall, although it was still unplastered, so that the girls could never be called "interlopers," as they are yet at Cornell.

An unfortunate departure from the principles of the founder was made after his death by Mrs. Stanford in arbitrarily fixing the number of the women students at 500. If it were thought necessary to place any restriction on the number of women, it would have been better to have made it a sliding scale proportionate to the population of the State or to the total number of the students. Still, so long as the total number of students is, in accordance with Mrs. Stanford's wish, kept to about 1500 or 2000, it makes no particular difference. One curious effect of this restriction, which perhaps was not anticipated, but which, as we have seen, is already becoming apparent, is that the severer entrance requirements imposed upon women tend to raise the average scholarship of the women above that of the men, which suffers by comparison. Some time along in the next generation, when 500 of the brightest and most earnest women of California are competing with 3000 or 4000 men



JUNIOR PLUG-UGLIES.



Leland Stanford Jr. University.

WHAT THE EARTHQUAKE LEFT OF THE LIBRARY.

of more ordinary character, there will be sandlotters at Stanford howling for an exclusion act.

At present, however, no such feeling is conspicuous, and the relations between the sexes seemed to me quite wholesome and normal. The boys who are in the period of adolescent aversion or completely absorbed in their work have nothing to disturb their peace of mind, and those who incline to some social intercourse, find opportunities in formal calls and balls as well as in walks through the beautiful grounds and picnics on the hills. These two classes of masculine students are called respectively "rough-necks" and "queeners." With that fluidity of language characteristic of campus life, these nouns are turned into verbs, as in "I did too much queening last year, so I'm going to rough-neck it for a while." As a contribution to the science of college slang I may mention that what is called "queening" in the California universities, that is, the seeking of feminine society, used to be called "buzzing" in Kansas twenty years ago, and goes by the name of "fussing" in the Middle West universities at present.

The sororities at Stanford have a pan-Hellenic agreement to postpone inviting new girls to join for a month after the opening of the year. On "Bidding Day," which terminates this rushing season, the invitations are sent out, and as the new girls come out of the classrooms at noon and walk toward the Row there is great curiosity to see which chapter house they will enter, and this interest is not confined to their own sex. I happened to be the guest at several fraternity tables when the rushing was at its height and found their interest in the contest took the usual collegiate form. "Ten to one that Miss Brown makes Pi Beta Phi." No takers, evidently a foregone conclusion. "Who has money to put up on the big Smith girl?" "Even, Kappa Kappa Gamma against the field." "Done!" The betting, as ordinarily the case, seemed to be based on the supposed possession of

private tips. Some young ladies to whom I was talking about it afterward expressed to me their high indignation at the practice, "as though we were horses," but I dare say — at this distance — that they were not quite so deeply displeased by the interest taken in them as their words implied.

The first students of Stanford, who, by the way, were an unusually bright lot of young people, realized that the university was short on history by one or two hundred years, so they set themselves to inventing student customs and manufacturing traditions. Their successors have kept up this tradition, and have shown something of the enterprise and resourcefulness which the world expects of Californians. The Student Affairs Committee found it necessary to insert a formal announcement in the last annual report to the effect that a single repetition of a proceeding does not establish a student custom henceforward unalterable forever.

The sombrero and corduroys affected by the Senior men are picturesque, convenient, and indigenous, which is more than can be said of the gown and mortar board. The headgear of the Juniors, the Plug-Uglies, shows an interesting development from the merely grotesque to the artistic and significant, reminding one of the evolution of imagery in primitive religions. I have heard that the smashed-hat custom came originally from the University of Leyden. At any rate it is common and peculiar to the California universities, but at Stanford it is mutating. Year by year the stiff white hats are more elaborately painted in colors according to the taste or, in the absence of taste, the caprice of the wearer; sometimes becoming veritable totem poles, epitomizing in symbol and legend his entire academic career, his fraternity, his athletic and scholastic triumphs, his adventures, and his ambitions. I hope that the Stanford Museum is not neglecting to acquire some specimens, for they will be useful material for the anthropologist as well as for the college historian of the future.

Perhaps it was because I was looking for it, but it seemed to me that I detected more of literary and artistic originality, or at least of ambition, in the California universities than elsewhere. It shows itself in their parades, their dramatics, and their annuals and magazines. Certain numbers of the Stanford *Sequoia*, the literary monthly, and the *Chaparral*, the "josh" magazine, have a typographical effectiveness which distinguishes them from the rest of my pile of student publications. As is natural, these journals have at times been more enterprising than judicious. The *Sequoia*, for example, in starting last year its series of articles on "What is the Matter with Stanford," taking up each department in turn and exposing its deficiencies, is entitled to the credit for good intentions which is always granted to a muck-raking magazine, but it cannot be said that its policy proved advantageous to the university or to the academic career of its editors.

Still the desire for new things, whether it take the form of experimenting with flying machines, novel dramatic effects, or strange philosophies, is one of the most encouraging signs in youth, and altogether too little scope for it is allowed in our educational system. For that reason I was pleased to find among my neighbors in Encina Hall a little group who were discussing theosophy and socialism on alternate Sunday evenings, devotees of Madame Blavatsky one week and of Karl Marx the next, and striving to find a suitable literary medium for this remarkable combination.

The students of California take naturally to outdoor spectacles, to parades and pageants. Why should not this tendency be encouraged and developed, instead of being allowed to run wild and make trouble? Could not the artistic instinct be combined with the athletic impulse, as once it was in Greece? Why need our sport be both brutal and ugly? Why should Stanford students imitate the games of a remote and foggy isle? Could they not invent a novel

form of athletic contest which would be worth coming across the continent to see?

The demolition of their great gymnasium at the moment of its completion gives them a chance to try. I climbed up one afternoon to the top of a pile of sculptured rocks, a heap of broken capitals and lintels, of heads, limbs, and torsos, looking like a Babylonian ruin. From this vantage point I could imagine a spectacle such as I had never seen, a whole school at open-air play, not forced gymnastics, but spontaneous movement for the joy of movement, not drilled to mechanical maneuvers, but trained to voluntary cooperation. The sunny plain, the lake, the woods, and the hillsides seemed alive with people, old and young, youths and maidens, each group with its appropriate part to play, each person with all his faculties engaged. It seemed half a pageant and half a game, spectacular and yet competitive. It was on a California scale, in tune with the big trees, appropriate to Palo Alto and possible nowhere else, on an athletic field of 9000 acres, miles of rough running, mass plays in three dimensions up and down the steep hillsides. And there was music of many instruments, timed to the play, and inspiring the players, and from the scattered groups of those who were for the moment idle came a sort of rhythmic chanting, apparently a musical development of the old drilled rooting. These choruses, while waiting their turn to come into the active game again, sang songs, Stanford songs, outdoor music of a new form, answering each other, challenging from opposing hillsides. I could not follow the game, not knowing the rules, but I could see that it brought into use every muscle and gave scope at unexpected moments to the most diverse individual talents. The young men were utilizing all their strength and endurance, while the young women were neither their competitors nor imitators, but played a part of their own, calling more for agility and finesse. The men were not dressed in the

ugly or ridiculous costume we associate with athletics, but artistically and appropriately, evidently with some individual freedom which found expression in the fanciful and the fantastic. The girls ran like the Winged Victory, free-limbed and free-bodied, their robes fluttering behind them seeming to hasten rather than to impede their flight. Theirs was not the dull uniform of the gymnasium, but bright and varied as the flowers and leaves. They were mostly bare-headed, with streaming hair, and I noticed they did not stop every few minutes, as they do in basket ball, to pick up shed celluloid. There was in the game an element of pursuit and capture, reminding me dimly of some tribal custom, a suggestion of symbolism which gave a deeper meaning and undefined interest to the play. The maidens played the part they play in life, the triple rôle of spectators, participants, and prizes. None but the brave deserve the fair I saw exemplified as in a tourney or folk game.

I turned my kodak at the scene and pressed the button. I realized that it was imaginary drama conjured up by the stage setting, yet I remembered reading an article [1] that Dr. Jordan wrote, not many years ago, but when he was very much younger than he is now. It purported to be an account of a seance of the Astral Camera Club of Alcalde on April 1, at which a photographic plate had been placed in the center of the circle and each member fixed his mind upon it and thought of a cat. The experiment was successful in demonstrating the influence of mind over matter, but the resulting photograph was very confused, owing to the fact that each person had thought of a different kind of a cat or of one in a different position. The article excited a great deal of discussion at the time, and I presume Dr. Jordan is still explaining it to anxious correspondents whose intelligence he had overestimated. But my imagination was apparently not strong enough to reduce the silver

[1] "The Sympsychograph," *Pop. Sci. Mon.*, 49, p. 597.

bromide on this film or else the effect was counteracted by a plunge into reality. For as I climbed down from the ruins I went into the surrounding woods and came out at a large wooden grand stand on which a crowd of idle students were sitting with their elbows on their knees, watching fifteen men going through some mechanical exercises. Their costumes were, to say the least, not esthetically gratifying, and all they did was to form in line, and then at a word of command rush forward and fall down in the dirt on top of a football, this over and over again, so spending all the afternoon "play period." And I knew that somewhere around the neighborhood, behind some hedge, was a group of young women, solemnly engaged in a similar absurd occupation, conscientiously working at manly sports in an unmanly way. I think it was the feeling of despair and skepticism of any improvement in athletics, induced by this, which fogged the films in my camera, so I cannot present as definite a plan of reform as I should like, for how can a man develop a faint mental impression in the light of common day?

Young as Stanford University is, it has had a stormy and exciting career. A glance at the curve of attendance will show something of its ups and downs, quite unlike the level or smooth upward slant of other universities. It has no sooner got out of one difficulty than it got into another. It has been four times shaken to its foundations, by a financial, a political, a geological, and a moral earthquake. In the first it seemed likely to lose its money; in the second its faculty; in the third its buildings; and in the fourth its students. Since it has successfully weathered all these catastrophes, its future is assured, for what other arrows can its evil genius have in his quiver?

The first shock came in 1893, at the death of Senator Stanford, only two years after the university was opened, when the United States Government laid claim to the Stanford estate. From being the richest university in the world

it was like to become the poorest. For a time it looked as if there would not be enough left of the estate to pay debts on account of the panic of that year. But by Mrs. Stanford's efforts the case was pushed through the courts to a final decision with unusual rapidity. The United States Circuit Court in June, 1895, the Circuit Court of Appeals in October of the same year, and the United States Supreme Court, March 2, 1896, all decided in favor of the university. But for six years the funds of the university were tied up, and it was only by real personal sacrifices on the part of Mrs. Stanford that it was kept from closing its doors. She did what Queen Isabella only offered to do, she sold her jewels, and whatever else could be converted into ready money, and cut down her own household expenses to pay the salaries of the professors. Most of them stood stoutly by their posts, although no assurance could be given them of another term's tenure, and they had to buy their own books and apparatus. Even when they were asked, "How much money do you have to have the first of the month to settle your grocery bill?" they did not lose courage. Distressing as were these times, yet there are those who look back upon them as Stanford's happiest period. For there was a feeling of solidarity and loyalty that has somehow since been lost. President, faculty, and students were brought closer together in mutual coöperation and unselfish sympathy than they are now in a time of ease and prosperity. They had been summoned from all parts of the country to the Stanford stock farm by a wave of the golden wand, and they had no common heritage of traditions, no community of sentiment, no attachment to the university, but these developed under the stress of this period. A feeling of real gratitude and affection toward Mrs. Stanford sprang up when faculty and students came to realize that the founding of the university was no millionaire's caprice, but a sincere and lofty purpose.

The second shock to Stanford was the Ross affair in 1900.

It is not necessary for me to enter into the discussion of the rights of this historic case, but only to consider its effect on the university. The publication by Mrs. Stanford in her address of April 25, 1903, on "The Right of Free Speech," [1] of much of the correspondence between herself and President Jordan makes sufficiently plain her motives for urging the dismissal of Professor Ross. All would agree with her in holding that a university should be kept free from partisanship and sectarianism, and that professors should not take too active a part in politics, but it is evident from her defense that her views of the safe and proper limits of professorial activity are much too narrow to be imposed upon a great university without seriously hampering its power and usefulness in the world. She gives the reasons which led her to believe that Professor Ross was too indiscreet and partisan to be a proper man for the place he held, in which opinion President Jordan came reluctantly to concur. The publication of his free silver pamphlet four years before had offended her sense of propriety, and she lost all patience with him when she read in the San Francisco *Call* that he had delivered a speech at an anti-Japanese mass meeting, in which he said: —

"And should the worst come to the worst, it would be better for us if we were to turn our guns upon every vessel bringing Japanese to our shores rather than to permit them to land."

The dismissal did not injure the reputation of Professor Ross, but it did injure the reputation of the university. He was immediately taken into the University of Nebraska and is now at the University of Wisconsin. Professor Howard, who left at the same time on his account, went to the University of Chicago and later to Nebraska. But

[1] Trustees' Series No. 6. For the pros and cons at the outbreak of the controversy see articles by C. F. Lummis and E. F. Adams and the report of the investigating committee of American economists, *The Independent*, Vol. 53, pp. 313, 508, 549, 1431.

I find that there still lingers in the minds of university people generally a certain suspicion against Stanford, a suspicion I believe to be unjust, as I see no reason for thinking that freedom of speech is unduly restricted. Certainly Professor Veblen, who has recently gone there from the University of Chicago, says things quite as shocking to conservative sensibilities as Professor Ross ever did, though on account of the cryptic language in which they are couched they are not likely to be circulated in a campaign pamphlet with cartoons.

The third earthquake, the literal one, occurred on April 18, 1906. The visitor at Stanford will have this date impressed upon his mind, for punctually at 5:13 A.M. on the anniversary he will be waked by the sound of gongs and bells and will be forced to join the parade in such clothing as he is able to get on before his door is broken in. For this also established a "student custom." The Portolá fault, the slipping of which caused the earthquake, lies about five miles westward of the university. The library nearly completed, which was to be one of the finest buildings of its kind in the world, was demolished, except for the great dome on its steel supports, and the gymnasium just finished was also a complete wreck. Both these buildings were of the general type familiar to us in State capitols. The earthquake also showed its strong prejudice against architectural inharmonics by knocking down the triumphal arch and tearing off the flying buttresses and spire from the Memorial Church, while leaving intact the arcaded quadrangles in the Spanish mission style. In the selection of which statuary should be taken and which left the earthquake showed a less discriminating taste. All together Stanford lost about $2,500,000 by the earthquake, a loss which would have put some first-class universities out of commission. As it is Stanford is still seriously hampered, for only $450,000 out of its entire income can be used for university purposes until the build-

ings are restored. The outside world, hearing the total endowment of Stanford University, estimated at $30,000,000, wonders why more is not accomplished with such a sum. The effect of the unprecedented generosity of the Stanfords toward education is very seriously impaired by the manner in which it is administered. Among both students and faculty, recipients of this bounty, gratitude is obscured by a feeling of irritation against what seems to them pettiness and injustice that cannot be entirely concealed even from a stranger. Rents and restrictions on campus houses are building up the outside towns. The dining room in Encina Hall is abandoned, and the students in charge of Stanford Inn have to cut down board to its lowest limit in order to come out even. As a consequence many of the students prefer to walk long distances to get their meals outside. This division of the faculty and student body into two groups residing apart impairs the unity of campus life, which is one of the chief advantages of a small university. Considering that no other endowed university gives so much for nothing, I think this feeling must be due to a lack of appreciation of the financial difficulties of the institution. If so, it could be easily removed by a policy of greater publicity on the part of the trustees. The charter requires an annual financial report to be made to the governor, but none has ever been published. I may cite the example of Princeton, which, though not responsible to the public in any way, has for the last few years given out full details of its investments, income, and expenditures.

The fourth earthquake occurred a year ago. It stirred up a good deal of dust, but it was merely a case of moral house cleaning, such as many another university needs as much and does not seem likely to get. Stanford had had the misfortune to be uniformly successful in intercollegiate contests, and this attracted a class of young men more interested in athletics and other amusements than in work,

not at all the Stanford type of student. "Beer-busts" became the custom, a student saloon was established in Menlo Park, and scenes of dissipation and vulgarity disgraced the campus. The students themselves said that something must be done about it, but when the Committee on Student Affairs attempted to do something, they took offense. Various demonstrations of revolt took place, and a general strike was threatened. The final result was the suspension of forty-one students and the penalizing of 157 more by adding five or ten unit hours to their requirements for graduation. It is not necessary for me to give further details; the sooner the affair is forgotten the better, except for its lesson, which is the danger of the mob spirit. By yielding to this a large number of decent and well-meaning students were led to rebel against the university authorities in defense of a vice for which they had no sympathy. The students of Stanford have acquired the *esprit de corps* of Yale and Princeton, but they have not learned the proper use of it as well as have the students of those universities. They resent being governed, but are not willing to govern themselves. For example, they declined to accept the responsibility of the honor system of examinations in which Princeton glories; they "did not want to spy on each other," etc. The new *régime* involves nothing more tyrannical than the prohibition of liquor in fraternity houses and dormitories, a rule common to most universities. Its beneficial results are shown on the chart in the falling off of delinquencies in the last half year. The two elevations in the curve at 1903–1904 and 1907–1908 coincide with periods of marked conviviality on the campus. In talking with the students I found that about all they had to complain of was injustices in the distribution of the penalties, inevitable in such wholesale punishment, and lack of tact on the part of the president. Tact is undeniably a handy thing for a president to have, but there are other qualities quite as rare and no

less estimable, such as a disposition to say out loud just what he thinks about anything.

I had expected on visiting Stanford to find some matter for amusement in the forms in which parental sentiment is there displayed. This seems to be the custom of those who "write up Stanford." But somehow I did not feel in the mood for it. I could not help thinking of Mr. Stanford's night of grief, and of its dawn, when the inspiration came to him that made him cry out: "The children of California shall be my children." I was impressed, not only by the foresight, good sense, and determination with which he carried out his aim, but also by the loving persistency with which Mrs. Stanford carried out hers, that of entwining the thought of her lost boy inextricably in the university, so that it should be a real memorial, so that he should not be deprived of his inheritance by death — for the university would be his forever. The time is not far distant when the personal relics in the museum, the family group in bronze, the hearts sculptured in the capitals, the awkward name fastened upon the university, and all the rest of it, will be the source of inspiration and pride to the students of Stanford. For Leland Stanford, Jr., will be the genius of the place, and the fourteen-year-old boy, like the spirit of immortal youth, will lead generation after generation through the university that he could not enter.

STUDENTS OF STANFORD UNIVERSITY, FROM THE BEGINNING 1891 TO 1910, REGISTERED BY MAJOR DEPARTMENTS

	Greek	Latin	German	Romantic Lang.	English	Psychology	Philosophy	Education	History	Economics	Law	Drawing	Mathematics	Physics	Chemistry	Botany	Physiology	Zoology	Entomology	Hygiene	Geology & Min.	Civil Eng.	Mech. Eng.	Elec. Eng.	Total	Students by Sex		
																										Men	Women	Total
1891–92 .	10	25	13	10	151	1	4	8	49	13	—	4	35	5	23	7	34	12	3	—	16	60	76	—	559	417	142	559
1892–93 .	15	40	20	22	178	3	3	21	68	37	—	19	34	8	30	14	51	17	1	5	17	63	98	—	764	537	227	764
1893–94 .	15	54	32	12	157	4	12	37	108	56	46	31	41	8	42	19	59	17	2	6	19	67	63	68	975	678	297	975
1894–95 .	17	62	49	20	167	3	5	39	115	64	101	29	34	11	47	17	84	22	3	12	22	60	39	78	1100	728	372	1100
1895–96 .	16	53	43	19	141	4	16	46	116	53	149	22	27	11	43	19	91	22	4	11	25	40	32	66	1069	691	378	1069
1896–97 .	10	68	55	25	140	4	21	50	147	72	122	12	29	12	42	12	86	21	11	10	30	38	19	55	1091	691	400	1091
1897–98 .	15	75	50	29	157	5	32	38	128	91	139	18	43	15	55	13	103	30	18	15	48	36	22	49	1224	766	458	1224
1898–99 .	9	85	55	36	165	4	1	56	126	73	124	12	36	9	50	15	92	33	14	10	61	28	15	44	1153	690	463	1153
1899–00 .	16	89	65	35	185	—	5	60	144	82	171	18	37	18	58	20	88	42	—	7	83	36	21	51	1331	821	510	1331
1900–01 .	18	90	64	47	204	2	5	60	143	78	195	15	35	12	66	13	93	36	—	3	98	46	27	39	1389	862	527	1389
1901–02 .	28	70	55	49	214	3	5	38	95	69	185	19	30	8	69	14	88	35	—	1	89	53	33	45	1295	799	496	1295
1902–03 .	24	67	77	55	223	6	16	25	108	88	197	18	39	9	78	19	85	36	3	—	127	68	50	65	1483	925	558	1483
1903–04	14	70	74	43	246	3	5	23	98	79	212	23	31	9	77	20	73	27	12	—	118	85	49	94	1485	946	539	1485
1904–05 .	10	62	88	43	226	5	3	21	93	90	209	19	33	10	93	18	71	39	12	—	124	118	71	110	1568	1040	528	1568
1905–06 .	16	74	101	44	222	7	4	27	104	93	308	30	36	11	107	22	66	32	14	—	127	138	76	127	1786	1221	565	1786
1906–07 .	15	58	95	23	178	6	—	25	128	97	299	32	25	10	84	28	64	29	12	—	126	146	73	115	1668	1141	527	1668
1907–08 .	19	54	92	20	177	4	2	26	143	131	295	31	34	13	83	31	53	28	11	—	123	185	66	117	1738	1186	552	1738
1908–09 .	15	45	81	30	165	6	3	37	139	144	248	33	28	11	79	31	55	30	9	—	127	169	63	113	1667	1133	534	1667
1909–10 .																										1142	605	1747

CHAPTER V

UNIVERSITY OF CALIFORNIA

WHEN Dean Berkeley, disgusted at an age and clime barren of every glorious theme, set out for the new world to found the university which should inaugurate the Golden Age, he had fixed upon Bermuda as its site, apparently because its sunshine, beauty, and tropical luxuriance attracted his imagination. Finding his dream, for which he had sacrificed his fortune, was impracticable, he did the next best thing, which, as often happens, proved to be very much better. He helped along other colleges. He had much to do with the founding of Columbia and the University of Pennsylvania, but Yale was his favorite. To it he gave his library and his land, and the roll of the Berkeleyan scholarship at Yale bears the names of twelve college presidents.

As the course of empire took its way westward it bore with it Berkeley's influence, and, what is unusual, his name. On the hills overlooking the Golden Gate, where climate and scenery are very like those he had desired for his utopian university, the College of California was founded by Yale men whose ideals he had helped to form and who hoped that here his prophecy would find its nearest fulfillment.

Great individuals are apt to be the offspring of mixed parentage. So are great institutions. The University of California derives its origin from the union of a New England classical religious college and a Morrill Act school of agriculture and mechanic arts. It takes after both sides of the house, according to Galton's law. This combination of qualities that are quite diverse and even antagonistic gives



BENJAMIN IDE WHEELER,
President of the University of California.

the institution a unique attractiveness. I know of no other university which cultivates both mechanics and metaphysics with such equal success, or which looks so far into space, and, at the same time, comes so close to the lives of the people; or which excavates the tombs of the Pharaohs and Incas while it is inventing new plants for the agriculture of the future.

It must not be assumed that this happy marriage of dissimilar colleges was effected without trouble. Quarrels were so violent in the early years of the union that the friends of both parties urged a divorce, and if it had not been for the legal impediments, it would have been accomplished. Those who are interested in the history of the strife, which indeed is not uninstructive, may find abundant material in the reports of legislative investigation committees, and the crossfire of pamphlets, petitions, and speeches. Some hint of it may be derived from reading an editorial in the *Atlantic Monthly* for July, 1874, which deplores the

"bold effort made openly and persistently by farmers' granges . . . that blacksmithing and carpentry as well as plowing should be taught." "Fortunately the danger has been averted."

"Many persons wonder why the friends of the University of California prefer State aid plus State interference rather than private generosity minus State interference."

The University of California chose the better part, that is, both. In accepting State aid it has not forfeited private generosity, and, on the whole, it has not suffered more from State interference than rival institutions have from patronistic interference. Fortunately, the danger referred to was not averted. I wish that the writer of the *Atlantic* editorial could have been with me when I went through the new granite palace constructed by private generosity at a cost of $800,000, the Hearst Memorial Mining Building, and saw in it a room filled with models of timbering and another with forges and anvils. "A mining engineer would

lose the respect of his men," said Professor Christy to me, "if he could not sharpen and temper a drill as well as any of them." That reminded me of another significant remark coming from the University of California. In the early days of agricultural research, which were not many years ago either, Professor Hilgard was under fire in some convention because he advocated the usefulness of soil analysis which he was one of the first to employ. "Why," exclaimed one of his critics, "a farmer can pick up a lump of earth and by squeezing it and smelling of it tell more about what it will grow than an agricultural chemist can find out with his test tubes." "Possibly," retorted Professor Hilgard, "but is a man entitled to be called an *agricultural* chemist if he cannot tell at least as much about a lump of earth by squeezing and smelling as any farmer can?"

In 1877, ten years before the Hatch Act had established experiment stations in all the other States, Professor Hilgard reported the beginning of the scientific development of the agricultural resources of California. If the millions that the Government has paid out for such investigations had all been as wisely spent as his first appropriation of $250, the United States would have been many times richer than it is. All of the important lines of work that have been developed since are represented in this report of nearly a generation ago, lectures, institutes, correspondence, experimental farms, seed introduction, and analysis of water, fertilizers, alkali, and soils, the last including a feature whose value the world was slow to recognize, the physical analysis according to the size of the soil particles. In 1908 the agricultural department published 70,000,000 pages of literature for the instruction of the farmers of the State and wrote 15,000 personal letters in answer to their inquiries.

Looking back on the fight of forty years ago, we can see that both parties were right in their fundamental contentions, and we can rejoice that both have succeeded in real-

izing their aims, with a completeness that they could not anticipate, in the present University of California. The classical party had reason to charge the grangers with being prejudiced against literary studies and narrow in their ideas of education. On the other hand, the grangers were right in insisting that the State ought to provide a different kind of training from either the old-fashioned college or the sort of agricultural college which had been conceded to them. They refused to be satisfied with an agricultural education which took agriculturists and turned them into teachers and lawyers and clerks, which lowered the standing of the occupation it was intended to elevate by continually drawing the brightest boys from the farms and preparing them for the city.

An indignant member of the Board of Regents in a hearing before an investigating committee of the Legislature at that time demanded of his agricultural opponents: "Do you wish us to teach your sons to plow and harrow, to peg shoes, or set up steam engines?"

This has been answered, as rhetorical questions are apt to be, in a way unanticipated by the querist. I do not find any Professor of Shoe-pegging in the faculty list, though possibly that subject is taught in the affiliated Wilmerding School of Industrial Arts, but the students not only set up steam engines, but design and make them, and a 750-acre farm has recently been purchased at Davis in order to give them a chance to plow and harrow.

One of the complaints brought by the grangers before the Legislature in the seventies was that to the graduates of the classical course were given big parchment diplomas with lots of signatures, while the graduates of the agricultural course got smaller ones of mere paper with only three names on them. Surely the farmer boys, if any one, were entitled to real sheepskin and to impose upon them a sulphated surrogate was something of an imposition. In 1881 President

W. T. Reid, in his inaugural address, declared his intention of establishing a greater equality: —

"I would see all the undergraduate departments of the university raised to the dignity and importance heretofore accorded to the classical course alone, by requiring in all, as nearly as possible, a like amount of hard, painstaking work."

The effect of this policy is shown in the curve and table on another page by the rapid increase in the number of students taking the agricultural and other technical courses of four or five years. What cannot be shown is that these students have the same earnestness, ambition, and pride in their work as those preparing for the three historic professions.

So much for the junior partner of the firm, the Morrill Act college of agriculture and mechanic arts. How about the senior partner, the College of California, whose prestige and property were generously, though with many misgivings, turned over to the State in 1869. Fearful, and not without reasons, lest the College they had labored so hard to create should be swamped in a polytechnic institution of low grade, the authorities of the College had it stipulated in the charter that their classical course should be taken over and maintained unbroken as the "College of Letters" of the new State university. They neglected, however, to provide any legal assurance that the supply of students for that course should be kept up. If the University should cease to give courses in Latin and Greek leading to the degree, of A.B., it would be in danger of forfeiting its site on the Berkeleyan hills, now immensely valuable; but what would happen if there should be no candidates for the A. B. degree, not even a lawyer can tell. Of such a catastrophe there is no danger, although the number of classical students is falling off both relatively and absolutely. The College of Letters in 1900–1901 had 13.55 per cent of the undergraduate body; in 1907–1908 it had 5.05 per cent. The explanation commonly given me, that "the boys are being crowded out

by the girls," will not apply here, if it does anywhere, for the classical departments are losing girls faster than they are losing boys. In the five years 1903-1904 *et seq.* the number of classical young men fell off 42 per cent and the number of young women 44 per cent. And since in Harvard, Yale, and Princeton a similar falling off among the Greeks is observable in spite of vigorous efforts to check it, I think it would be just as well if the classicists should lay aside the argument of feminine encroachment, to be used only in emergencies, and direct their attention to the more real causes of the decline, with a view to finding out how they can extend the influence of the thought and spirit of ancient Greece to a generation which has an unconquerable aversion toward its language.

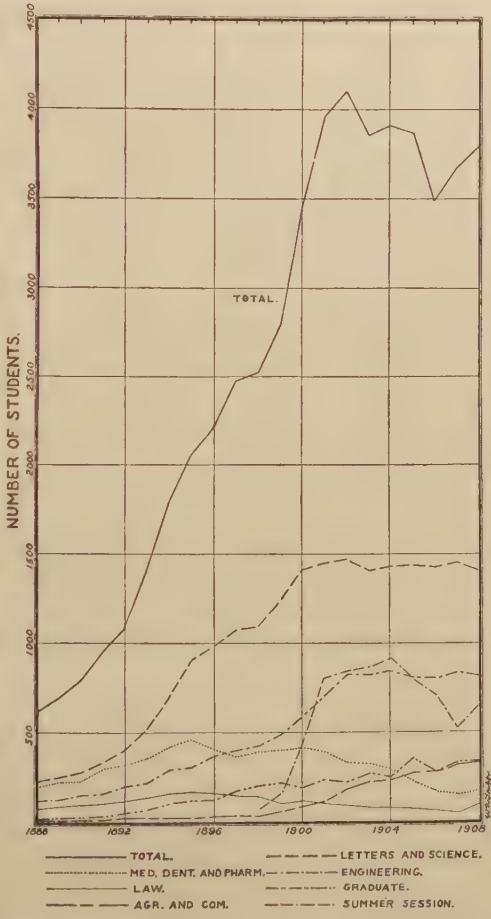
The course of empire cannot be checked or diverted by faculty action. In the latest presidential report I see that Professor Ferguson had 10 students in the History of Athenian Democracy, while Professor Moses had 44 in Latin-American History. Professor Allen's class in the Iliad numbered 31; Professor Fryer's in the Chinese Language numbered 54. Ten students were beginning Thucydides under Dr. Linforth, and fifteen were beginning Japanese under Mr. Kuno. The class in Sanskrit was small, four students, only one more than in Herodotus, but a boom in Sanskrit may be expected when Pacific steamship lines improve.

The University of California has thus inherited the good traits of both parents, and eliminated their bad ones. It has escaped from the bonds of the traditional curriculum which some would have imposed upon it and has found outside a larger humanism than they dreamed of. It has become something far different from the congeries of trade schools, which others wanted, and has developed new forms of vocational training, both more practical and more theoretical than they thought possible. The majority of

the undergraduates are now in neither the classical nor vocational groups, but in the social science courses leading to the degree of B.L., and in the natural science courses leading to B.S. Both these colleges remain rather stable in proportional size, the former comprising about 42 per cent of the undergraduate body and the latter about 8.5 per cent. This large middle class keeps the institution from separating into two camps as at Yale. Then at the head of this whole university of sixteen colleges there is a philologist who has outgrown philology, who has done his share of root digging, but has not been made near-sighted by it, who is "Greek-minded" in the true sense of the word, not merely because he knows more than the ancient Greeks did about their language, but because he is a man of the world and a politician (also in the true sense of the word). The fact that he was two years ago asked to become president of the Massachusetts Institute of Technology, which has nothing Greek about it except its name, is not only a compliment to him, but an indication of a better feeling than used to prevail between the rival educational movements.

At the University of California I found several things that seemed to me signs of a coming together of the right and left wings of the faculty. In mechanical, mining, civil, and chemical engineering courses of four as well as five years are given, requiring, respectively, 144 and 160 units of work, the extension of time being made to permit the inclusion of more cultural studies. It shows how little importance is nowadays attached to degrees that the same degree, B.S., is given for five as for four years' work. Professor Gayley repeats his inspiring course on the great books of the world for the benefit of the engineering students. Even the Greek department does not disdain to let some light shine upon the barbarians. Dr. Linforth gives a popular course on Greek literature in translation, as Professor Murray does at Stanford.

It seemed to me that there was in the University of California more unity than was to be expected in so large, complex, and diversified an institution, that there was in the faculty an unusual degree of harmony, or at least of mutual comprehension and respect for each other's ideals. I may be altogether wrong in this, for such chance impressions are unreliable, but I hope I am not, and I have sufficient confidence in its correctness to suggest two possible causes of it, two factors which have always been rather prominent in California, but conspicuously lacking in most State universities. I refer to the artistic and to the philosophical tendencies of the institution. The former chiefly find expression now in the musical and dramatic activities connected with the Greek theater, and in the architectural scheme of the campus. As an indication of the literary



THE NUMBER OF STUDENTS IN THE UNIVERSITY OF CALIFORNIA FOR THE LAST TWENTY YEARS.

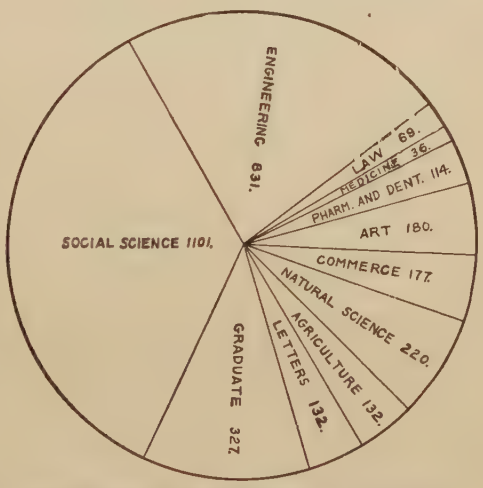
impulse it is sufficient to say that in 1870 Bret Harte was elected "Professor of Recent Literature and Curator of the Library and Museum" at the highest salary paid, on the strength of having written "The Luck of Roaring Camp" and "The Heathen Chinee." He did not accept, preferring New York and London. One wonders what effect it would have had on his work if he had. I mention it merely because the production of these two little masterpieces would have debarred him from most universities instead of securing him an appointment, and if they had been handed in as Sophomore themes, they would have come back marked "D minus" on account of their numerous barbarisms, solecisms, and improprieties.

For the philosophical impulse the university owes much to Professor Joseph Le Conte, one of the original faculty, occupying the settee of "Geology, Natural History, and Botany." His devotion to his specialty, geology, did not prevent him from considering the human and popular aspects of the science. He frankly championed the cause of Darwinism when that was perilous to a professor, but instead of meeting intolerance with contempt he provided in his "Evolution and Religious Thought" a *modus vivendi* very much needed in this great crisis of the nineteenth century.

There are two organizations of instructors and advanced students in the university devoted to the discussion of philosophical questions, and in 1909 they practically exchanged subjects. The Philosophical Union, composed chiefly of professional philosophers and humanists, took up the sciences, and in successive meetings called before it representatives of each science to explain its fundamental concepts. The Kosmos Club, largely men of science, devoted the year to the study of pragmatism, which, if not a philosophy, is nearer to being one than any that scientists have hitherto been willing to accept.

President Jordan says "the pressure of higher education to the square inch is greater in California than in any other State." Perhaps the unit is wrongly chosen, for California is a large State, but otherwise the statement is probably correct. The same might be said of literary activity. I understand that the offer of a prize by a New York magazine for the best story brings more manuscripts from California than from any other State, even Indiana.

If California is to live up to its scenery and its climate, it must develop its own characteristic art form, adapted to a new environment. We should expect it to be something grandiose and spectacular, a larger and more comprehensive combination of all the fine arts. It seems to me that California is most likely to produce a school of open-air dramatists. The sunlight has recently come into our paintings, but it is still shut out of the theater. This art would, I imagine, be a development of the pageant in which the poet and the musician and the colorist would have a better opportunity for the display of their powers than ever before, but the choragus would be greater than them all. It would be suited to the Western spirit, for it would be a more democratic form of art than any we have now in a double sense, for it could be seen, heard, and comprehended by more persons, and in the performance masses of people would play



DISTRIBUTION OF STUDENTS AT THE UNIVERSITY OF CALIFORINA, 1907-1908.

the parts formerly assigned to individuals, to gods first, heroes next, and stars now.

The development of the "High Jinks" by the Bohemian Club of San Francisco into an open-air opera, with the mountains and sky for backdrop, giant redwoods and granite rocks for properties, and all outdoors for spectacular effects, is an indication of the direction of the Californian artistic impulse. At the university there are many manifestations of the same tendency. The annual pajama parade is sloughing off its vulgarity and becoming more elaborate year by year, without losing its carnival spirit. In the student plays at the Greek theater the chief feature has come to be the "mob," and this is drilled with the greatest care and costumed without regard to expense. The enthusiasm and effectiveness shown by the students who form this mob or chorus suggest that it has been a mistake to leave to mercenary "supes" so important a part. When the first Sanskrit play seen in America was produced here, the students, at their own initiative, brought up an elephant from San Francisco, to walk twice across the stage of the Greek theater in the procession. In 1909 Professor Van Dyke's poetical drama, "The House of Rimmon," was staged with like elaborateness, under the direction of a professor who had studied Assyriology in Berlin and taken his advanced work in Semitics in an Arabian tent. It might have been expected that the Princeton boys would have been the first to bring out "The House of Rimmon," but the Triangle Club of that university prefers comic operas like "The Duchess of Bluffshire," as better fitted to their tastes and talents.

In all the universities I visited there is a strong dramatic movement, but in no other does it take so wide a range in time and space as at the University of California. Here is the record of the student activities in the last year or two: "The Little Clay Cart," a Sanskrit drama; Æschylus's "Eumenides"; "Samson," a spectacular Biblical play;

"Abraham and Isaac," a fourteenth century mystery; "Thersites," a sixteenth century drama; "The Merry Wives of Windsor"; Ben Jonson's "Hue and Cry after Cupid"; Pinero's "Trelawney of the Wells"; the Junior farce and the Senior extravaganza; not to specify the plays given by the German, French, and Spanish clubs.

The women students take an active part in university dramatics, both as authors and actors. The Junior farce and part of the Senior extravaganza mentioned above were contributed by women in open competition. The co-educational universities have in this field a great advantage over institutions like Princeton, Pennsylvania, and Yale. The Yale Dramatic Association, for example, is ambitious and conscientious, but cannot hope to achieve artistic success so long as it is hampered by the conventions of the Elizabethan and Japanese stage. Boys may do very well in such rôles as Rosalind and Viola, but to attempt the impersonation of the modern women of Ibsen, Pinero, and Shaw puts too much of a strain upon their histrionic genius. The marvel is not that they do it well, but that they can do it at all. The action of the Harvard Dramatic Club this year in introducing Radcliffe students into their plays shows a commendable disposition to break with traditionalism.

The building of the Greek theater has done much to promote the musical and dramatic interests of the University of California. It is the largest of its kind in the world, seating seven or eight thousand, every one of whom can see and hear perfectly. What this means can be appreciated by those universities which have auditoriums of inadequate size or of impossible audition on account of the echo. The Greek theater is built of concrete, at a cost of $50,000, the gift of William Randolph Hearst. It is located in a wooded, semicircular dell, reached by a steep and winding path, and is most effective at night, when the scena is lighted by

the reflected glow of the electrics, the tall, dark trees rising around like pillars supporting a lofty dark blue dome. But sometimes the roof leaks.

Interclass games have been held in the classical style. Each of the four men who represent a class contest in all events, running, jumping, and throwing, and the prize is a laurel wreath. This is good so far as it goes, but it is too purely imitative. What we need in art and athletics is a renaissance, not a revival. I suggested in the last chapter that the love of the beautiful and the love of the strong, which in this age of specialization are rarely cultivated together, might be united, especially in California, in some new form of outdoor sport which should be both spectacular and competitive. I was convinced of the need of such a revolution when I went into the Harmon gymnasium and saw several hundred young men, standing as closely as possible in a hot, steamy, sweaty, carbonated atmosphere, simultaneously going through a long series of muscular exercises, right biceps contracted so many times, left ditto, right sartorius flexed, etc., etc., monotonous, mechanical, stupefying drudgery, when just out of doors were hills and plains bathed in California sunlight and swept by Pacific winds. No doubt the system of muscular exercises was ingeniously devised to bring into use in due turn every one of the four hundred, but I know that most of them are employed in a quick climb up to the big C on the crest of the hill. I tried it.

California, isolated from the other States, can control its own athletic policy, and the two universities by mutual agreement have adopted the Rugby form of football in place of the American game. There is great diversity of opinion as to the respective merits of the two games. The students of Stanford are now quite reconciled to the change. The students of the State university would prefer the old football. Perhaps the fact that Stanford has usually beaten



University of California. CHINESE CADETS.



University of California. SENIOR HALL.

the State university may have something to do with the feeling. The Stanford boys have beaten the British at their own game, holding the championship of the Pacific coast by defeating the Vancouver fifteen, and they are now ambitious to compete with England and Australia. The Rugby is a more open and spectacular game, using a wider field and giving more chance for individual initiative, but it has little advantage in respect to roughness. Injuries are just about as frequent as in the old game, but are less apt to be serious.

Military drill is required of all male students in the Freshman and Sophomore years at the University of California, as at all State universities which receive the national grants. About the value of this opinions also vary. The anti-militarists object to it, of course, on principle; others think it takes up too much time and attention with little benefit to the student or advantage as a training for martial service. But, on the other hand, it gives an outdoor physical exercise, though not of the best kind, and the two years' training in spruceness, conformity, and swift obedience is good for the somewhat crude and undisciplined material received by the State universities. More important yet, perhaps it strengthens the feeling of obligation, of duty owed to the community, which is the most striking difference in the atmosphere of the State and endowed universities.

In California it has another advantage in bringing together, shoulder to shoulder, students of many different nationalities. On the parade ground I saw a Japanese putting another of the same race through the manual of arms, and I took a snapshot of four Chinese cadets who may in the future take an important part in the regeneration of their country. I was told a pleasant incident of a Chinese student who had risen to the rank of lieutenant, although he was afterward reduced for some trivial mistake. One day as he was drilling his company of American cadets he had a visit from his family, his mother in full Oriental cos-

tume of embroidered silk and his two sisters in fashionable American attire. Without any embarrassment or affectation he gave his company "place rest" while he turned away to pay his respects to his mother and greet his sisters, and then returned to his drilling. At Harvard a young instructor told me that it was a great mistake to let the Chinese come to the university, that we were giving them arms to use against us. I did not hear such sentiments in the University of California or in Stanford, though no doubt I might have. Considering the intensity of race prejudice on the coast, it seems to me rather remarkable that the two universities should show comparatively little of it. Anti-Sinicism does not appear to be any stronger in the Californian universities than anti-Semitism in Princeton, Pennsylvania, and Columbia. It is an indication of good feeling that a Japanese millionaire, the potato king of California, recently sent in a check to pay for fitting up a room in the students' infirmary. There were registered for 1908 in the University of California seventeen students from China, eighteen from Japan, and nineteen from India.

I do not mean to convey the impression that there is no prejudice against Asiatics in the University. Intolerance is the common failing of young people everywhere, and the Californian students are not free from this form of it. It has even given rise to disorders on the campus. The Asiatics are sometimes contemptuously referred to as "Skibbies," and are subjected to various slights which will not give them a favorable opinion of American standards of democracy and equality. There is a Cosmopolitan Club at Stanford, but none at the State university.

The treatment they receive from both their instructors and their fellow-students is, on the whole, better than might be expected under the circumstances. Every effort should be made to keep the University free from racial discrimination and antagonism, for its future very largely depends upon

close relations with Asia. Here will be found the commercial, industrial, and educational opportunities for usefulness and profit, and the University of California is in the best position to take part in it, to buckle the belt of civilized nations around the globe. If, by any untoward event, it should lose its hold on the East or the West, the duty would fall on other universities. As the universities most likely to become formidable competitors of California in this new field I would suggest Chicago, Harvard, Cornell, and Illinois.

But it is misleading to speak of "competition" between universities when they are merely rivals for a nominal or numerical priority. As well say that two fishermen are competing when they are angling from the same dock. There are just as good fish in the sea as ever were caught, and plenty of them. The best instance of this is California. No other State offers such opportunities for higher education, two first-class universities open to both sexes without any tuition fee. It is no wonder that the friends of the State university felt some apprehension of the effect of the founding of Stanford. Here was a limited field, for it is hard to draw students westward, even from Detroit to Ann Arbor, from Omaha to Lincoln, or from Kansas City to Lawrence. Here was a university, receiving insufficient support from the State, forced to do much work of high-school grade, having only a few hundred students, with its buildings getting old and shabby and little prospect of getting better ones. Query: what would be the effect of opening within thirty-five miles of it another free university with new and beautiful buildings and an endowment of unprecedented magnitude? Whatever the effect may have been, the University of California has now nearly eight times as many students at Berkeley, and of higher grade; it is well supported by the State, and receives generous gifts from private sources and has started on a more ambitious building program than any other university in the country. It would be absurd to

say that this is altogether due to Stanford. The University would probably in any case have grown and prospered, as all the other State universities have done. But it is safe to say that its normal growth and prosperity have been very materially accelerated by the presence of its so-called rival, and that in no respect has it been injured or impeded.

The University of California has had a hard struggle to provide room and instructors for the students who have crowded to it in such rapidly increasing numbers. The end of the struggle is not yet in sight. An additional building affords no more relief than another subway in New York. The new architectural scheme is designed to accommodate five thousand students, but there are likely to be ten thousand before it is completed. The old buildings cannot be torn down, as the new ones are put up, for they are as indispensable as before. The chemistry building, for example, proliferates in vain; the added cells are at once filled to overflowing. The old carved black-walnut desks are still in use, and new desks are put around the open court between the buildings, not a bad arrangement in a mild climate, and in a study where draftiness is good for the health. The instructors are as overworked as laboratories are overcrowded. One man, with a part-time assistant, has charge of sixty students in quantitative analysis.

Like Stanford and the State universities in general, the University of California places little dependence upon entrance examinations, but admits by certificates from accredited schools. Only about eight students a year are admitted wholly by examination. At the end of the half year students who have fa led to make satisfactory grades in half their work are "flunked out." There are now 147 secondary schools on the accredited list, and they are judged as factories are judged, by the character of their product. The average grade of the first term's work of entering students for a series of years serves as a basis of comparison

for the different preparatory schools. Tested in this way the private schools, which supply about 11 per cent of the total number of students, make a very poor showing compared with the public schools. For the last seven years the percentage of students from the public high schools doing work of first and second grades — there are five grades — was 51.52, while the corresponding percentage for the private schools was 37.83. Of the students from the public schools, 13.84 per cent failed in their first term's work. Of the students from the private schools, 25.07 per cent failed. The records of examination and class work in Harvard, Yale, Princeton, and Pennsylvania show that the same is true in the East, where the private schools have been long established and held in high esteem. Since there are so many conspicuous examples of governmental inefficiency and wastefulness, it is worth while calling attention to the fact that in the field of secondary education public management has proved to be more efficient and economical than private enterprise. It is sometimes argued in behalf of the private schools that they receive an inferior grade of material and therefore are not able to turn out so good a product in spite of greater expenditure per individual and more personal attention. I do not know how much weight to give this plea; but whatever the cause, it is evident that a university which would get the highest quality of students must keep a close connection with the public high schools.

Michigan was the first to conceive the idea that the public school system of a State should be a unit, with no decided break in the educational ladder from the primary grade to the graduate school of the university, but California adopted and extended the plan. Each accredited secondary school, public and private, was visited every year by university professors representing different departments. This practice was an important factor in the development of the

excellent high school system of the State, and the reflex influence on the university was not less beneficial. As the number of high schools increased at the rate of more than five a year for the last twenty-five years, the visitations became a heavy expense to the university and a burden to the faculty, so President Wheeler has abandoned the system. This may be necessary, but it is unfortunate. The university needs it, if the high schools do not. A single examiner, however efficient and well qualified, cannot do so much good as the various professors, for the inspection and accrediting, which were the ostensible occasion of the visits, were less valuable than the mutual understanding and spirit of cooperation resulting from the acquaintance between men working in the same department in the secondary school and the university. No averaging of grades can take the place of this personal knowledge of each other's difficulties and ideals. Just as the chief purpose of the examination system in the university is not to find out how much the students have learned, but to make them learn more, so the chief purpose of the inspection system is not to find out whether the secondary school is worthy of the privilege of sending students to the university, but to make the university more worthy to receive them.

But the statistical study of grades made by the Examiner of Schools [1] for the purpose of keeping a check on the work of the preparatory schools brings many other interesting points. One is that there has been no falling off in the average grade of scholarship in the entering students for the last seven years. In several other universities I heard the complaint: "The high schools are sending us poorer material every year of late." It seems that in California at least this is not the case.

The examiner finds that the average grade of the first-year students in the College of Letters (classical course) is

[1] Biennial Report of the President, November, 1908, pp. 118–141.

higher than in the College of Social Science (main liberal arts department), and that in the technical colleges it is lower than in either of the others. The examiner assumes that this indicates that poorer work is done in the technical colleges than in the others, and he suggests the following reasons: that the work of these colleges may be intrinsically much more difficult than in the Colleges of Letters and Social Science; that the pupils from the high schools are too immature or are not properly prepared; that the recent popularity of technical careers has drawn many lacking the natural ability for such work; lastly, that the large percentage of women, who, as a rule, make better marks than men, may have raised the average for the other colleges "to an abnormal height."

University catalogues and annual reports make very entertaining reading on account of the delightful naïveté of some of their expressions; such, for example, as the word "abnormal" in the above sentence. I have often heard male students express the opinion that the scholarship and industry manifested by their feminine competitors were abnormal, but I did not expect to find this view of it officially indorsed.

That women students do as a rule get superior grades is undeniable, but I am inclined to believe that it is due more to their faithfulness to daily duties than to any superiority in natural ability. This, however, may be due to masculine prejudice on my part. They are certainly less apt to indulge excessively in outside activities, or, at any rate, they do not allow them to interfere with their class work. Another point often overlooked is that college women as a rule enjoy better health than college men. This is brought out by the infirmary statistics in this same California report. During the year 40 per cent of the men and 35 per cent of the women were excused from classes on account of illness during the year 1907–1908. The male students lost on the average 4.8

days apiece from illness and the female students 2.0 days apiece.

A marked line of distinction is being drawn at the University of California between the first and last halves of the college course. All work in the Lower Division must be completed before the student passes into the Upper Division, and the Junior Certificate, which is granted at that point, is required for admission to the four years' medical course. Eventually much of this Lower Division work will probably be done in the high schools or small colleges. The graduate school has been strengthened by the new State law which requires all high school teachers to have taken a year or more of graduate work in a university belonging to the Association of American Universities, or at least a half year of such work in addition to a half year of advanced study in a normal school. Stanford and the State university are the only institutions on the coast belonging to the Association, and the nearest eligible institution outside the State is the University of Minnesota, 1500 miles to the east. This law brings to both universities a desirable class of students, earnest and practical, although not necessarily candidates for higher degrees.

Although the California universities are ambitious to develop their graduate schools, yet it is common for the professors to advise their students to go to the Atlantic universities for their advanced work, in order to get a broader education. The Harvard and Yale alumni associations of California provide scholarships of two or three hundred dollars for graduates of Stanford or the State university who wish to study in these institutions. These are very generously printed in the university catalogue. The universities of the East might well reciprocate and send some of their students to the universities of the Pacific Coast, both for broadening their views and for special lines of work, such as Oriental and Spanish-American history and biological

and anthropological research, in which they offer unique opportunities. One of the reforms most needed in our collegiate system is greater freedom of migration, and the University of California has already shown a disposition to go more than halfway in facilitating this. At present the percentage of undergraduate intrants born in the State is about 58, and slowly increasing with the rise in the proportion of the native-born population and in the local prestige of the university.

Another method of overcoming the disadvantages of an isolated situation is the exchange of professors, especially for the summer school, and the securing of Eastern lecturers. The California climate permits of work all the year round, so the first term begins about August 6 and closes December 20; the second extends from January 11 to May 12, and the summer session from June 22 to August 1.

Although it takes only a few minutes more to go to Palo Alto than to Berkeley from San Francisco, yet the State university draws its students much more largely from the metropolis, and although Palo Alto is less than thirty-five miles south of Berkeley as the aeroplane flies, the young people from the southern part of California show a preference for Stanford. This in itself makes a certain difference in the character of the student body. It may be necessary to remind the Eastern reader that the people of northern and southern California regard themselves as distinct in their physical, psychical, social, and religious characteristics as do the people of Connecticut and South Carolina or of England and Italy; and with as good right, too, for they are as many miles apart. The existence and importance of this difference are frequently impressed upon the stranger, but it would be rash in him to attempt to characterize it, lest in trying to be fair to each he should offend both. Stanford has a much larger number of students from the eastern part of the United States than the State university.

The University of California is to be classed with the metropolitan universities like Chicago, Columbia, Pennsylvania, and Harvard, and thus takes on a different character from Yale, Princeton, and Stanford. A sail across the bay and a trolley ride up the hill, amounting to about forty minutes, brings the student from San Francisco to the campus. At present about 7 per cent of the undergraduates doing work at Berkeley come over daily from the city, but this element tends to increase. Of the rest of the students about 80 per cent live in Berkeley and 10 per cent in the contiguous suburb of Oakland. The University, like most of the State universities, maintains no dormitories; consequently the fraternity system has developed to supply the need of student homes. There are 21 Greek letter fraternities and 9 sororities, besides 14 house clubs for men and 6 for women. The house clubs differ from the fraternities chiefly in being non-secret and less permanent. In many cases they develop into fraternities by applying to one of the national organizations for a charter when they get a congenial lot of fellows together.

Being practically in a city, the University of California is in some degree relieved of the responsibility for the behavior of students, which, as we have seen, has been the cause of considerable difficulty at Stanford, where there is not even a village organization. Besides this an efficient and smoothly running system of student control has been developed within the last few years at Berkeley, and has accomplished some much-needed reforms. The faculty Committee of Student Affairs boasts of its idleness. It meets once or twice a year, apparently more for the purpose of maintaining its statutory existence than for any more serious object.

The center and symbol of this undergraduate self-government is Senior Hall. This is to be found hidden away in Strawberry Canyon, which is the bed of a traditional creek

running all the way down through the campus in order to provide opportunity for several picturesque bridges. Passing over one of these and under a Shinto torii, and dodging the limbs of the live oaks that look dead in the daylight, but jostle you most rudely in the dark, you see a cabin made of redwood logs, and if it is Thursday evening you will hear the Senior Singing. Here are discussed and settled, not merely the problems of the universe at large, but also, what is more important, of the University in particular.

The inner circle is the Order of the Golden Bear, composed of twelve men elected at the end of their Junior year, who add to their number, when they become Seniors, three or more of their own class. There are also several honorary faculty members, including the president, elected for life. The aim is to include in the Golden Bear representatives of various departments, and the leaders in all branches of student activity, athletics, journalism, debating, dramatics, even scholarship. This society is secret, keeps no record of its conclusions, and takes no official action in university affairs, but is able from the character of its membership to initiate movements and to mold public opinion without the extent of its influence being fully realized by the students generally. It is not, however, under an ostentatious taboo, like the Yale Senior societies.

The official body having charge of undergraduate discipline is the Student Control Committee, composed of Seniors, and, by something more than a coincidence, chiefly of members of the Golden Bear. This committee is appointed by the president of the Associated Students, of which body all students, men and women, paying the annual dues of one dollar, are members. The women have a similar organization devoted to their own affairs. A movement to disfranchise them from the general association on the ground that they had a separate organization was defeated by a

heavy vote. The offices in the Associated Students are in practice confined to men.

It would be easy, of course, to bring theoretical objections against the system of self-government in California. One might doubt the wisdom of putting one class in control of the other three and of granting extensive and indefinable powers over their fellow-students to a secret and irresponsible society. One might question what would happen if the faculty, president, and trustees found it necessary to take some action in decided opposition to undergraduate opinion, such, for example, as the abolition of intercollegiate athletic contests. One might venture to predict that there will come in California, as there has in other universities, a time when public spirit and the sense of responsibility will decline, and the Student Control Committee come to be composed of men of no character or of bad character instead of the capable and representative students who have hitherto composed it. But this is only another way of saying that California has not discovered any automatic safety device that will insure student self-government against the evils that beset self-government outside universities. The only superiority I can see in the Californian system over those in some other universities is that it works. This, however, is an advantage of sufficient importance to outweigh any theoretical objections. The students in authority seem to have followed a policy of conservative amelioration rather than of revolutionary reformation. They have not attempted any radical change of student habits, but have stopped some flagrant abuses. They have not adopted the honor system of examinations, but have materially curtailed the amount of cheating. Established customs of disorder, such as hazing, roughhousing, and rushing, have been abolished or reduced to comparatively innocuous forms. In place of hazing a certain mild penalism is imposed on Freshmen, such as serving refreshments, moving the grand

stand, etc. The class rush, formerly rather a brutal affair, has been done away with, and, as the sign of its abolition and the seal of the perpetual treaty of peace between the warring classes, a gigantic "C" has been laid in concrete on the highest hill of the campus, visible across the bay and for miles down the valley. The University of Utah boys have put a "U" that is still bigger on a mountain near Salt Lake, but it does not mean any more. Every year the Sophomores with great ceremony turn over the guardianship of the C to the Freshmen, who keep vigil over it around a campfire all night and pledge themselves to protect it against all comers, especially against Stanford students armed with an ax and a can of cardinal paint.

A Californian custom that could be adopted by many other universities, much to the improvement of their looks, is Labor Day, when all the students turn out to beautify the campus. It is like a scene from a utopian romance, the wageless workers, ready to do anything useful, each according to his ability, all duly coördinated and directed by volunteer experts; the civil engineers superintending the grading of roads and cutting of new paths; the arboriculturists the planting and trimming of trees and shrubbery; a season of general cleaning up, clearing out, and putting to rights; a working day of socialistic brevity, for shortly after noon the boys are called from their labors to a bean feast prepared by the girls in the gymnasium, and the afternoon and evening are spent in sports and merrymaking. The value of the work done last Labor Day is estimated at $2800, but the greater gain to the University in the development of an interest in the looks of the campus cannot be calculated in dollars. The only fault to be found with Labor Day as an institution is that it has been placed on a most unfortunate date, in fact the most unfortunate date, February 29.

The University of California has been rather backward

in the development of its professional schools. There are five of these located in San Francisco: the Institute of Art, the Hasting College of Law, the College of Medicine, the College of Dentistry, and the California College of Pharmacy. They are still in the transitional stage, loosely affiliated, chiefly supported by fees, and not largely attended. The plan for the future seems to be to establish gradually at Berkeley schools of medicine, law, architecture, etc., of a thoroughly university character, keeping the San Francisco institutions as auxiliary schools, carrying one or two years of the course or giving instruction adapted to students living in the city who are not able to take a long and advanced course. That is, California is confronted, like the other State universities, with the dilemma of raising its standards to meet the modern demands for a wider culture and more thorough training in the professions, and at the same time of providing for the needs of those who ought not to be deprived of all chance of professional training because they cannot give six or eight or ten years to it. Of this dilemma California takes both horns, sticking one in Berkeley and the other in San Francisco.

The first two years of the medical course have now been transferred to Berkeley, giving an opportunity to establish a university hospital at San Francisco. The new Boalt Memorial Hall of Law will be built on the Berkeley campus.

Another movement that should be mentioned here, although it is independent of the university, is the development of centers of religious thought at Berkeley. The Roman Catholics have founded there Newman Hall, an admirable students' club, and much more than that. The lecture courses given in it on religion and philosophy are of as high character as those of the university. The various Protestant denominations are establishing theological seminaries at Berkeley in coöperation with each other, avoiding

as much as possible the duplication of chairs, and utilizing the instruction of the State university for the secular branches, including Latin, Greek, and Hebrew. Similar movements are on foot in other States. The old days of rivalry, antagonism, and distrust between the denominations and the State universities have evidently gone by, and we are entering upon a new era of mutual helpfulness whose possibilities we can only dimly foresee.

The belief is still prevalent in certain sections of the country that the State universities, while they may do excellent work in utilitarian lines, can never do anything in the higher branches of scholarship and scientific research. The University of California shows how far this view is from the truth. The branch of science for which it is most distinguished is the least utilitarian of them all, — astronomy. For its practical purposes astronomy requires no more apparatus than a 3-inch telescope and a clock. Even a 36-inch objective like that of the Lick Observatory discovers nothing likely to be of the least practical benefit to this planet. James Lick bequeathed $700,000 to provide the University of California with the biggest telescope in the world, located on Mount Hamilton, about fifty miles south of San Francisco, but this sum was not sufficient for an adequate endowment of its work, so the University has to provide about $20,000 a year for running expenses and improvements. Besides this, the University keeps up an observatory at Berkeley equipped for research as well as instruction.

The list of the pub`ications of the University of California shows how far they are from being confined to utilitarian subjects. Among them are six volumes in American archeology and ethnology, three in botany, one in classical philology, one in economics, one in entomology, two in education, four in geology, one in pathology, one in philosophy, three in physiology, two in Semitic philology, four in zoölogy,

three in Græco-Roman archeology, one in Egyptian archeology, and twelve in astronomy.

It used to be thought that State universities could not expect private benefactions of any considerable value, but this also has been disproved, first and most conspicuously by California, which, it used to be said not long ago, had received more gifts than all the other State universities put together. This statement is doubtful now, for the Universities of Vermont and Virginia, as well as many others, have been generously treated of late, and when the University of Wisconsin comes into the Vilas bequest, it will rival California in endowed wealth. Philanthropists everywhere are coming to realize that donations to public institutions are likely to be more permanent, more widely useful, and more generally appreciated than private foundations, and the town libraries, city museums, and art galleries, and State universities are beginning to benefit by this realization.

Of the benefactions received by the University of California those of Mrs. Phœbe A. Hearst, a member of the Board of Regents, have been most varied and continuous. Besides supporting many scientific and archeological researches, she has furnished the funds for the architectural plans of the University and for two of its first buildings. Ten years ago the Regents invited the architect of the world to compete in designing a harmonious building scheme providing for the future development of the University, without regard to the existing buildings on the campus. The total cost of the competition was about $160,000, and the first prize was won by M. Émile Bénard, of Paris.

This international architectural competition was worth all it cost, perhaps not for the actual value of the Bénard plans in themselves, but for the publicity it gave to the ambitious ideals of the University and for the impulse it gave to the movement for harmonious collegiate architecture all over the country. The portfolio of prize designs



University of California.

THE HEARST MEMORIAL MINING BUILDING.



University of California.

THE GREEK THEATER.

was distributed freely to other universities, and on many a campus we find indications, sometimes amusingly or pathetically futile, of an attempt to realize its grand conceptions. Even to the campus of California the plans of M. Bénard were not very closely adapted, and by the time they are put into stone there will not be much left of them except the general scheme of arrangement. Notwithstanding that a plaster relief map of the campus was sent to Paris and the winning architect later came in person to locate the buildings, the plans do not fit the ground, and the axis of the whole has had to be shifted. Not even the second building, the new mining building, could be placed where he had designated, for it would have involved a fill of sixty-five feet on one corner. It shows how American universities look to European eyes that the dominant note of the scheme which M. Bénard elaborated in detail was a spectacular dome intended as a sort of Hall of Triumph to the greater glory of athletics. It would have done very well as a Hôtel de Ville at Lyons, or a Palace of Peace at The Hague, but no one would have suspected it of being a university or of belonging in America, least of all in California. The supervising architect, Professor Howard, has abandoned this feature altogether, putting a drill ground in its place, and in drawing the plans for the other buildings has given them some touches of originality and indigenousness in varying degrees. Thus, though the new law and library buildings will adhere rather closely to classical lines, California Hall, which is used for classrooms and administrative offices, is somewhat less conventional, the new Hearst Mining Building shows still greater individuality, and the future Agricultural Building will be decidedly novel, as befits the State that produces so many novel plant forms. I liked the design of the Mining Building best, except for some details. It is handsome from all sides, and cleverly adapted to its peculiar purposes, as in the treatment of the central

hall, sixty-four feet high, with a five-ton traveling crane running its entire length of 120 feet, and in the rows of tall chimneys for the furnaces; but I must confess, although it may expose my ignorance or lack of taste, that I do not see any artistic or utilitarian justification for the two columns and entablature that are stuck in the large windows.

The new library will cost over a million dollars, half paid by the State and half from the bequest of Charles F. Doe. It is much needed, for the present building is painfully inadequate for its 200,000 volumes, and those who want to read them. The latest important addition to the library is the unique collection of Herbert Howe Bancroft on Western and Spanish-American history. This contains about 50,000 books and twice as many manuscripts, and was recently purchased by the University for $150,000. Whatever may have been Bancroft's deficiencies as a historian, he performed an invaluable service to history in getting hold of the letters and journals of the pioneers of California, and of the records of the Spanish whom they displaced. There are sixteen students now working over this rich material.

The most interesting building to me was not one of the new million-dollar palaces, but a châlet of rough pine boards just across Strawberry Canyon, for this is the laboratory of Professor Jacques Loeb, one of the few scientists that the outside world is not willing to let alone. But such unheard-of things as hatching sea urchins that have a fatty acid for a father will get into the papers, however carefully concealed "in the obscurity of a learned tongue" such as German or technical English. I found Professor Loeb happier than in Hull Court at the University of Chicago, for here he has fewer reporters and an ocean full of experimental material. He wants no marble or granite palace; he wants only room and salt water, with partitions movable to suit the exigencies of the experiment, for his physiology is not a static

subject. He showed me an experiment. It looked easy. I could have done it myself if I had thought of it. Into a glass of sea water he put some minute marine animals, and then sensitized them to light by a dash of carbonated water from a siphon. As promptly as at a word of command they all headed toward the electric bulb like a herd of cattle toward a watering trough. I wondered whether some reagent could not be discovered that would induce such photo-tropism, such an eagerness for the light, in a crowd of human beings. Carbon dioxid does not seem to work that way on people in a lecture room. I merely mention the matter here to reserve the field for future investigation.

Leaving the physiological laboratory, I went on up the hill, past a building full of clattering machinery, the realm of "the scholar in overalls," on up the steep winding path through the tall trees to the barren brow of the hill whereon is the big C. Here I was 900 feet above the ocean and could look over the tops of the trees and the two cities of Oakland and Berkeley out across the bay, where lies the city of San Francisco. To the left I could see far down the valley hemmed in by mountains, among them Mount Hamilton, the site of the Observatory. Straight in front was the Golden Gate, ever open and inviting westward toward the Far East.

I was reminded that the Gate opened in as well as out when I saw a young man sitting in the glare of the afternoon sun on the bare and dusty hillside. I thought he was asleep, but as I came closer I found he was reading a Sanskrit book; Vedantic philosophy, he courteously informed me. I squatted at his feet like a disciple before his guru, while he gave me a first lesson in yoga practices, drawing diagrams in the sand with a broken twig to illustrate the theory of the four selves and to show how all paths led to absorption in the All. It was surprising to find the Absolute here established, serene and unshaken, asserting its

old-time prerogatives of unity and infinity just as if Professor William James had not visited the campus only a few months before.

I inquired if he were not homesick. The philosopher is equally at home in all lands, he replied, also demonstrating it geometrically. He was obstinately uncomplaining; still I gathered the impression from the conversation that there were times when self-denial ceased to be a virtue and became a painful necessity; that when the crops in India failed and the ryots could not pay their penny or two a year to the Swadeshi fund, the Hindus in America had to practice more abstinence than yoga required. The Indian students are mostly sent to this country by the Scientific Industrial Association of Calcutta to study agriculture and manufacturing in order that they may achieve the economic independence of their country. There also seems to be a desire to get them out of British influence and into a more democratic atmosphere. Every campus, as I have said, thinks it has the most democratic atmosphere in the world. I wonder what the Orientals think about it. It is worth considering, now that they are looking to us for help in the development of their civilization. There is a new form of university coming, which is foreshadowed in California. Greater and more influential than a State or a national university will be the international university of the future.

STUDENTS ENROLLED IN THE UNIVERSITY OF CALIFORNIA, 1888–1910

Year	Graduate Depts.	College of Letters	Col. of Nat. Sci.	Col. of Social Sci.	Col. of Commerce	Col. of Agricul.	College of Mech.	College of Mining	Col. of Civil Eng.	Col. of Chemistry	Total Undergrads.	Total at Berkeley	Lick Observatory	Law	Medicine	Dentistry	Pharmacy	Art	Total, San Fran.	Summer Session	Grand Total [1]
1888–89	15	48	—	160	—	9	23	23	50	25	348	363	—	67	73	29	82	—	251	—	614
1889–90	21	51	—	197	—	9	28	25	42	27	380	401	—	76	97	50	77	—	300	—	701
1890–91	25	57	—	214	—	11	35	30	53	28	432	457	3	84	84	62	81	—	311	—	780
1891–92	37	65	—	268	—	9	30	32	52	42	510	547	4	96	89	98	107	—	390	—	945
1892–93	47	75	—	309	—	18	58	24	57	45	603	650	6	120	98	114	103	—	435	—	1097
1893–94	64	93	34	397	—	17	84	32	58	38	753	815	7	127	111	142	95	91	566	—	1383
1894–95	100	113	48	555	—	17	108	39	83	61	1024	1124	8	153	142	168	110	82	655	—	1781
1895–96	118	124	79	700	—	15	128	60	56	56	1218	1336	3	161	119	205	114	107	717	—	2047
1896–97	121	152	97	739	—	21	136	110	51	71	1377	1498	1	152	132	166	95	167	720	—	2213
1897–98	174	195	119	751	—	32	133	156	39	74	1499	1665	2	141	132	158	71	222	731	—	2391
1898–99	194	216	120	748	3	21	127	170	40	87	1532	1717	5	132	152	161	68	206	724	74	2513
1899–00	218	266	141	826	21	31	144	191	50	113	1783	1987	2	106	161	149	82	171	671	159	2819
1900–01	183	281	178	926	41	42	159	216	74	141	2058	2229	2	120	177	152	77	271	797	433	3457
1901–02	230	284	194	952	57	61	190	248	91	171	2248	2470	4	106	162	136	87	186	677	799	3943
1902–03	219	284	202	980	88	91	235	277	134	165	2456	2669	4	86	133	125	79	183	606	830	4105
1903–04	269	232	192	979	119	102	243	293	166	107	2433	2688	3	77	114	111	82	213	597	868	3863
1904–05	243	215	189	1014	125	106	266	285	207	62	2469	2699	3	79	114	87	86	243	609	913	3916
1905–06	351	194	191	1054	154	123	267	271	211	54	2519	2839	4	76	73	74	81	195	499	798	3868
1906–07	281	145	221	1049	154	127	264	274	219	42	2505	2761	2	74	40	65	47	—	226	707	3490
1907–08	324	132	220	1101	177	132	260	278	250	43	2610	2916	3	69	26	69	45	180	389	522	3673
1908–09	403	137	282	1081	192	155	293	261	247	51	2699	3083	1	100	35	53	67	139	394	661	4002
1909–10	414	—	—	—	—	—	—	—	—	—	—	3334	—	118	105	57	76	207	563	819	4520

[1] Special students added and double registration deducted.

CHAPTER VI

UNIVERSITY OF MICHIGAN

THE essential difference between a State university and other universities is that the former is part of a public school system. The source of the income is of less importance, and there is not so much difference in the composition of the student body as is generally supposed, for even endowed universities of widest reputation have a local constituency and draw a large majority of collegiate students from a surrounding area no larger than a Western State. But if all the young men in Connecticut boycotted Yale, that university would not be materially altered, while if a State university were dissevered from the State administration and school system, it would lose its distinctive characteristics. Therefore, all direct comparisons between an endowed university and a State university are improper and misleading, unless the fact that the latter is not an independent entity, but an organ, is taken into consideration. A book written on the physiology of the human head without reference to the body which nourishes and supports it and which it largely controls, would have very little value. It is because, in Michigan, this system was first completely developed that this university has stood for more than a half century as the typical and leading State university.

The germ of this idea is found in the Act of 1817, establishing the Catholepistemiad of Michigania. Judge A. B. Woodward, of the Supreme Court of the Territory, friend and appointee of Thomas Jefferson, devised the plan of the uni-



Photograph by A. S. Lyndon, Ann Arbor, Mich.

JAMES BURRILL ANGELL,
President of the University of Michigan, 1871–1909.

versity and its terminology. One page of the historic document in his handwriting, preserved in the university library, reads as follows: —

A Table of the Professorships of a University Constructed on the Principles of the Epistemic System

I		II
	The nearest familiar and elegant names adapted to the English language.	The epistemic names which may be engrafted without variation into every modern language.
I.	Literature	Anthropoglossica
II.	Mathematics	Mathematica
III.	Natural History	Physiognostica
IV.	Natural Philosophy	Physiosophica
V.	Astronomy	Astronomia
VI.	Chemistry	Chymia
VII.	The Medical Sciences	Iatrica
VIII.	The Economical Sciences	Economica
IX.	The Ethical Sciences	Ethica
X.	The Military Sciences	Polemitactica
XI.	The Historical Sciences	Diegetica
XII.	The Intellectual Sciences	Ennœica
XIII.	Universal Science	Catholepistemia

In some respects it is a pity that this nomenclature was allowed to lapse. It would have afforded splendid material for college yells. When the students of the Epistemiim of Iatrica rushed the boys coming from the lecture rooms of the Didactorim of Anthropoglossica, then would have come the tug of war.

The first faculty consisted of two men — the Rev. John Monteith, from Princeton, who held the presidency and seven of the Didaxiim, and Father Gabriel Richard, who held the vice-presidency and the remaining six, a careful balancing of the rival factions of the young territory, Catholic and Protestant, French and English. Special taxes and lotteries were authorized for the support of the institution, though the latter were never employed.

But the important thing about the Act of 1817 was that it founded not merely a university, but a complete public

school system. The university was empowered to establish libraries, colleges, and schools in the counties and towns of Michigan and to appoint their "Instructors and Instructrixes."

The Catholepistemiad scheme was of French origin. It bears the stamp of the constructive genius of Napoleon. The next impulse also came from France, though originating in Germany, and it was fortunately in the same direction. A copy of M. Victor Cousin's Report on the State of Public Instruction in Prussia fell into the hands of the Chairman of the Committee on Education of the Convention of 1835, which framed the State constitution. So a school system on the Prussian model came into existence simultaneously with the State government, and as its head the university was established at Ann Arbor, with "branches" in many parts of the State. The branches, however, were soon lopped off, and the university became of the conventional type of the New England college.

The third great formative influence came direct from Germany. Henry P. Tappan, Professor of Moral and Mental Philosophy in the University of the City of New York, had gone to Germany to study the educational system there, and returning, he chose the presidency of the little institution in the backwoods of Michigan rather than his former professorship, because he believed that "a university in the proper sense could be built up only as an inseparable part and a living member of a system of public instruction," and that the conditions essential to its development could not be found in the East.

The instantaneous transformation of the college into the university affected by President Tappan can be seen by a glance at a file of catalogues. The catalogue of 1851–1852 looks like a valentine, fancy gilt print on shiny white paper; a faculty of six, the traditional prescribed course, and a "Catalogus Senatus Academici et eorum Qui Munera et Officia

Gesserunt"; commonplace, conventional, self-satisfied, unambitious, unimaginative. The catalogue of 1852–1853 is a business-like pamphlet in brown, with fourteen names in the faculty list, and, what is even more significant, five unfilled professorships. President Tappan's genius is shown in the way he advertised the deficiencies of the institution. He headed his roll, "Undergraduate Students." There were no graduate students, but he wanted it understood that there ought to be. It was six years before the first resident graduate student was proudly listed, James C. Watson, in astronomy, one of Dr. Tappan's first acts being to secure, through the generosity of citizens of Detroit, an observatory with a telescope of 13-inch objective. He introduced lecture and laboratory methods of instruction, adopted the principles of election and equivalence of studies, admitted new scientific and technical courses, added departments of medicine, engineering, agriculture, and law, and planned for other such professional schools, all to be ultimately based upon four years of collegiate work, which he anticipated would be done mostly in secondary schools scattered throughout the State. In accordance with Prussian ideals, he abolished dormitories, and made no attempt to regulate the private life of the students, at the same time resenting the attempts made by an officious public to regulate his.



DISTRIBUTION OF STUDENTS AT THE UNIVERSITY OF MICHIGAN, 1907–1908.

He insisted that money should be put into apparatus and books instead of fine buildings, and he had no use for honors and grades. He welcomed the short term and irregular student who came for some special thing and went away when he got it.

I am devoting an unusual amount of space to the history of the University of Michigan, partly because it is little known to general readers and partly because it enters into the history of all the Western State universities and other institutions as well. As Charles Kendall Adams said in 1896:—

"One of the normal methods of advance seems to be for the University of Michigan to devise some new educational variation, or return to some old European standard, and then, after it has demonstrated its success, pass it through Harvard, as civilization is passed through France. It can then be proclaimed as the ripe fruit of the oldest and most renowned of American universities."

The first Tappan catalogue marks an era in American educational history. It lays down the main lines of the development of the State university, not only up to the present, but into the future. The Association of State Universities at its last convention tried to do what Dr. Tappan wanted done, to draw a clear distinction between the university and the college, to require collegiate preparation for professional work, and to insist upon graduate work as an essential to a university. The relegation of part of the undergraduate work to high schools and subsidiary colleges is another Tappan idea which seems likely to be realized within the next decade.

In his inaugural in 1852 President Tappan said: "We are a university faculty giving instruction in a college or gymnasium." The same could be said now by the presidents of four fifths of the institutions in the United States calling themselves universities, but they are not much given to saying it. The Tappan catalogues were ambitious and

imaginative, but they were not exaggerative. During the ten years of his administration he kept standing in the catalogue this statement of policy: —

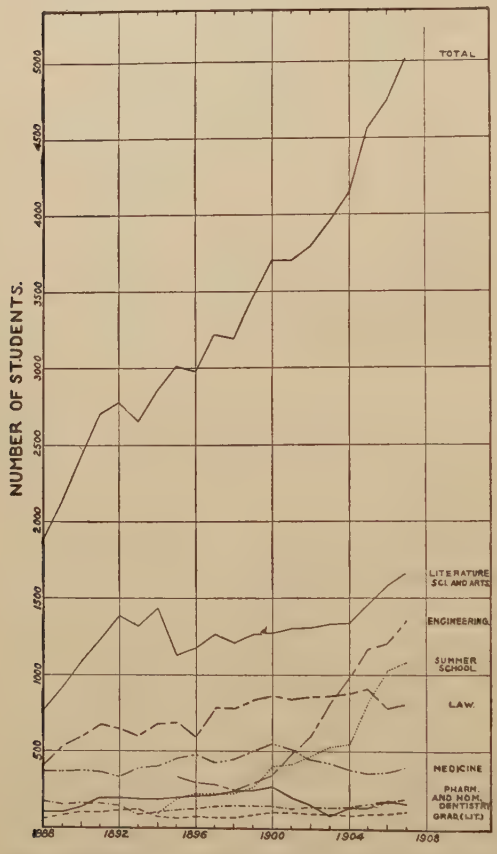
"But the regents and faculty cannot forget that a system of public instruction can never be complete without the highest form of education, any more than without that primary education, which is the natural and necessary introduction to the whole. The undergraduate course, after all that can be done to perfect it, is still limited to a certain term of years, and, necessarily, embraces only a limited range of studies. After this must come professional studies, and those more extended studies in science, literature, and the arts, which alone can lead to profound and finished scholarship. A system of education established on the Prussian principles of education cannot discard that which forms the culmination of the whole. An institution cannot deserve the name of a university which does not aim, in all the material of learning, in the professorships which it establishes, and in the whole scope of its provisions, to make it possible for every student to study what he pleases and to any extent he pleases. Nor can it be regarded as consistent with the spirit of a free country to deny to its citizens the possibilities of the highest knowledge.

"It is proposed, therefore, at as early a day as practicable, to open courses of lectures for those who have graduated at this or other institutions, and for those who in other ways have made such preparation as may enable them to attend upon them with advantage. These lectures, in accordance with the educational systems of Germany and France, will form the proper development of the university, in distinction from the college or gymnasium now in operation.

"Such a scheme will require the erection of an observatory, a large increase of our library and our philosophical apparatus, and additional professors. A great work, it will require great means; but when once accomplished, it will constitute the glory of our State and give us an indisputable preëminence."

It is strange that a professor of mental philosophy and an experienced educator should have so grievously underestimated the powers of forgetfulness of faculty and regents. President Tappan was summarily and ungratefully dismissed in 1863, and it was not until 1893 that the Graduate

School was formally organized, and it does not yet contain the twenty departments he outlined. After his dismissal the heading "Undergraduate Students" was dropped from the catalogue, together with all his other hints that the university was an unfinished pyramid like that on the great seal of the United States.



THE NUMBER OF STUDENTS IN THE VARIOUS DEPARTMENTS OF THE UNIVERSITY OF MICHIGAN, 1888–1908.

The Regents elected the Rev. Dr. E. O. Haven president of the university at the same meeting that they declared the removal of Dr. Tappan. His administration lasted six years, at the end of which the presidency was offered to James B. Angell, then President of the University of Vermont, who at first declined the offer, but the university waited until he changed his mind two years later and accepted. It is a pleasure to record these names, because they are so few. Three presidents in fifty-seven years is a record to be proud of and is worth calling to the attention of some of our younger State universities, which shift presidents biennially or oftener. The stability, uninterrupted pros-

perity, and astonishing growth of the University of Michigan must be largely due to this continuity of administration. For more than half its life the university has had a single head, a man of remarkable executive ability and tactfulness, who has always commanded the confidence and respect of the people of the university and the people of the State. Three times he had been called into the diplomatic service of the nation for one or two years, as Envoy Extraordinary and Minister Plenipotentiary to China in 1880, as commissioner for the negotiation of a treaty with Great Britain on the fisheries question in 1887, and as Minister to Turkey in 1897.

This is a critical year in American education, when three of the oldest and most experienced college presidents retire together — Eliot, of Harvard, at the age of seventy-five, after forty years of service; Northrop, of Minnesota, at the age of seventy-five, after twenty-five years of service; and Angell, of Michigan, at the age of eighty, after thirty-eight years of service, plus five years as president of Vermont. Such men are rare, and we must feel some anxiety for the future when we realize that the chances are against finding successors who will prove as able and reliable as they have been. All three retire voluntarily while still vigorous and in full possession of their faculties, in order to leave the field to younger men.[1]

[1] The appointment in September, 1909, of Dean Hutchins as Acting President was a wise move on the part of the Regents, as he is an able administrator and the university will not suffer, however long it may be before a permanent president is chosen. Harry Burns Hutchins was born at Lisbon, New Hampshire, April 8, 1847. He came to Michigan with his parents in 1867 and entered the university from which he was graduated with the class of 1871. For the year following he was in charge of the public schools at Owosso, returning in 1872 as instructor in History and Rhetoric. In 1873 he became an assistant professor, which position he held for three years. In the meantime he had been preparing for the law, and he resigned to become a partner with his father-in-law under the firm name of Crocker and Hutchins of Mt. Clemens and Detroit. Eight years later

President Angell is a large man in every way, able to take up shocks, buffer-like; a diplomatist, even tempered, judicious, and unworried. He has in recent years been governor of the institution in the steam-engine sense of the word, keeping things running smoothly, rather than supplying motive power or guiding in new directions. This has not been on the whole a detriment, in my opinion; first, because the university is not suffering for want of a revolution, and, second, because it has thrown a large measure of responsibility on the faculty. They have been compelled to take the initiative and to do some planning for the university as a whole, instead of each man working solely for the interests of his own department, as is apt to be the case where there is a dominant executive. Nowhere else did I find so much earnest discussion of the larger aspects of educational policy. My efforts at interviewing the various professors were often impeded by their turning the tables on me by inquiring what was being done in other institutions to solve the problems confronting Michigan. The faculty and senate meetings are anything but dull; they are not formal academic debates or perfunctory registrations of routine business, but are filled with real controversies over vital issues, and not unenlivened occasionally by manifestations of the pure joy of conflict.

The cause of this activity is simply that the younger generation has come knocking at the door. Until the recent changes, the average age of the authorities of the university — president, secretary, and influential members of the faculty and Board of Regents — was over seventy years. But

he was recalled from his practice to fill the chair of Jay professor of law, which position he held for four years and then relinquished to organize a law department at Cornell University. He was recalled to the University of Michigan in 1895 as dean of the law department. This is not his first term as acting president, for he served in a similar capacity with great success, in the absence of President Angell as United States Minister to Turkey, in 1897–1899.

there is a yeasty young element in the faculty; new men who, individually and organized into various groups, have been persistently agitating divers scholastic reforms, and fretting because the progress is not commensurate with their earnestness and energy. It is natural, on the other hand, that the older men in power should fail to see the need for radical changes in the established order, and should ascribe to the desire for personal advancement a greater share in the movement than it really has. It would imply disrespect for precedent if I should fail to refer in this connection to the story told by Oliver Wendell Holmes of the session of the medical faculty of Harvard forty years ago, when, in reply to an indignant inquiry of one of the older professors as to why the good old ways were being so upset, Mr. Eliot calmly said, "I can answer that question. There is a new president." The situation in Michigan just now is somewhat similar, but with one important difference. The reply of the younger element to this eternally recurrent question has to be in most cases, "There is a new instructor," and this answer does not have the same convincing sound, even assuming that it has the same force of character behind it.

I do not mean to imply that the faculty at Michigan is rent by dissensions or contains more discordant elements than other faculties. This is not the case, and I regard this activity as a very encouraging feature, referring to it merely to explain why it is that there is a jar and clatter about the administration that contrasts with the smooth-running or non-running machinery of some of its rivals.

As an instance of the conflict of present-day tendencies with the older ideals of the university, I will take a trivial question, the introduction of the Phi Beta Kappa. This is an honorary society, dating from 1776, to which are elected in most colleges students who have manifested superior scholarship and literary ability in their undergraduate work, usually about a tenth of the Senior class. In some

institutions it is a highly prized distinction, with some tangible benefits; in others it is an empty honor, being conferred on a class just going to leave after all their schoolmates have left, or no honor at all because it brands the initiate with the name of "grind" or whatever the local term may be. In coeducational institutions, if it is awarded strictly according to grades, it is apt to be monopolized by the more diligent sex and goes by the name of "the woman's club." It is nonsecret; any member may and some of them can give the Greek for "Philosophy, the Guide to Life." At a reunion the public may look on while two "old grads" fumble with their fingers trying to remember the grip.

Well, when it was proposed to put the Phi Beta Kappa in the University of Michigan, President Angell opposed it on the ground that it was contrary to the spirit of the institution, and undeniably it was. Prizes, badges, robes, honors, distinctions, and all such extraneous bribes to scholarship are contrary to the historic ideals of the University of Michigan. But this is Tag Day everywhere, and the Phi Beta Kappa, with the help of the Zeitgeist, got in. Then appeared a difficulty. How could those Seniors having the highest grades be elected when there are no grades? The Examination Report blank has in its upper left-hand corner abbreviations for four different kinds of failures, but only one kind of success, just plain "Passed." The university dismisses its graduates with a simple "Well done," the adverb insusceptible of comparison. It is not worth while giving the ingenious method by which this obstacle was surmounted by the Phi Beta Kappa. The university will before long probably succumb to the inevitable and adopt the grading system and all the rest of it. Still, one does not love the Inevitable any the better for such victories as these.

Another and more important example of change in policy



University of Michigan.

UNIVERSITY HALL.

Photograph by A. S. Lyndon,
Ann Arbor, Mich.

now being forced upon the State universities, contrary to their fundamental principles, is in the regulation of student affairs. The theory of the State university is that the State here offers at great expense, but free to all its young people, the opportunity for an education. It is like a fountain in a public square, giving its water freely to every passerby without regard to whether he has food and clothing, or whether he spills the water in carrying it to his lips. The assumption is that nobody will come to the university unless he is earnestly desirous of an education. Unfortunately, this assumption is not justified, perhaps less justified nowadays than when higher education was less common. The "leisure class" is becoming an appreciable factor in Western universities, although still far smaller than in the Eastern. It is becoming evident also that the ordinary well-meaning student needs more looking after than he has been getting. Anyway, the laissez-faire policy is breaking down all along the line, in university as in civil administration, and even those of us who were inoculated in our youth with Mill and Spencer have to admit the desirability of the change.

Good teaching has always been one of the strong features of Michigan University, even during the period, now happily closing, when good teaching was regarded as a sign of mediocrity. But it has been decidedly improved in efficiency of late by the adoption of more stringent regulations in regard to attendance on class exercises and the like. If a student is doing poor work, some effort is now made to find out why, and sometimes it becomes apparent that the student was not the only one to blame. Entering students are now assigned in small groups to advisers, and in many other ways efforts are being made to bridge the gap, which in Michigan had become unduly wide, between faculty and students. The appointment of Professor J. O. Reed as Dean of the Department of Literature, Science, and the Arts has caused a general "bracing up" of class-room work.

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The old "take-it-or-leave-it" air is giving way to a new spirit.

A part of the same movement is the greater attention now being paid to the private life of the student. The Eastern universities ordinarily provide both instruction and lodgings and charge for both, although in neither case what they are worth. That is, the total expense of the college course is shared between the college and the student. It is also shared in the case of the State university, but in a different way. The university provides the instruction without charge, and the student bears all his personal expenses. This is a pretty theory, but pretty theories, like pretty girls, do not keep their looks as they grow old. Neither plan, in fact, works satisfactorily. College dormitories and dining halls have often proved annoying to manage and expensive to maintain, and in many cases private dormitories and boarding clubs, self-supporting, have proved more attractive to the students than the accommodations provided by the college. On the other hand, private enterprise, given a free field by the State universities, has not furnished the sort of accommodations that the students ought to have. The fraternity houses provide a part of the students with pleasant and comfortable homes, but have brought with them certain evils that are causing anxiety everywhere. The poor student who "baches it" on crackers and prunes, and puts in twenty to forty hours a week at hard labor, is not getting the most out of his college course. And between these is the great body of young people of both sexes, picking up a precarious living in boarding houses, sporadic clubs, and private families of all sorts and conditions. A town which is dependent on a college for its support gets to regarding the students as its prey. It resents any interference with its proprietary rights. It weaves around the college a network of intertwined interests, like that which in Switzerland protects the tourist industry.

There is, besides, as I have said, the traditional opposition to paternalism. When I was a student in a State university, the feeling against dormitories was so strong that, if one had been offered to the university by some philanthropist, it might have been rejected as an insult. Such a rule as that recently adopted by Princeton, requiring all Freshmen and Sophomores to eat together at a certain place, at a certain price, would have been regarded as an intolerable tyranny. But times change, whether we change with them or not. Now the universities everywhere are beginning to realize the need of something of the kind, although legislatures have not yet come to the point of passing appropriations for such purposes. This is just the time when philanthropy should come to the rescue and establish student homes on a semi-self-supporting basis. The various religious denominations could do more good in many cases by maintaining residential halls in connection with the State universities than in keeping up their small rival colleges, which often contain fewer members of the denomination than does the State university. In Michigan certain capitalists propose to erect a large dormitory, with commons and clubrooms, under student control. Such a building, properly managed, would be of great benefit to the university, and the undertaking, though purely commercial in its motive, might well receive such unofficial encouragement and support as the authorities can give.

There are more undergraduate students at Ann Arbor than at any other university in the country, 4419 in 1908, Pennsylvania following with 3736, then Minnesota 3468, and Cornell 3454. They have been left largely to their own devices, and the devices have not always been of a creditable character. Class scraps and "horsing" have had no accepted restrictions or regulations. Hair-cutting, face-painting, house-raiding, and kidnapping became epidemic. Freshmen were treed and egged and put through such stunts as sopho-

moric ingenuity could devise. The class rush on "Black Friday" was preceded by a week of general disorder and excitement, seriously interfering with regular work. The student shows and parades sometimes contained features offensive to good taste and propriety. Press reports of such things, exaggerating the disorder and eliminating its redeeming factor, the good-natured boyishness of it all, have given the institution a reputation that, in my opinion, it does not deserve. The Michigan boys do not, I think, behave any worse than those in other universities, but they make more noise about it.

A decided reaction has set in within the last year or two that promises to bring about a better order of things. The Law Department, as is appropriate but not necessarily to be expected, led in the reform. The class rush in its old form has been ordered abolished, and some substitute, such as push ball and the tug of war, is being sought for that will eliminate its brutality while retaining its strenuosity. The hair of Freshmen, even though too long for the style, is undisturbed. The Senior and Sophomore drinking clubs, the "Friars" and the "Pipe and Bowl" have been ostensibly extinguished. What is more encouraging than faculty action is the spontaneous change in public opinion among the students themselves. One or two of the saloons have gone out of business for want of their former student patronage. But in the recent election, when so many counties in Michigan went dry, the County of Ann Arbor did not. This does not speak well for the civic influence of the university on the community in which it has been situated for over half a century. If the saloons are not to be banished from Ann Arbor as they have been from Cambridge, Berkeley, and Urbana, they should at least be kept decent.

The most important duty of the next president will be the development of a sense of self-respect and responsibility

on the part of the students. The students are not yet ready for such a system of self-government as prevails at Princeton and at California, nor, it must be said, are the faculty. Recently, when a student was caught cheating, one of the professors called a jury of his peers, who found him guilty and advised his suspension for a year, but this sentence was not confirmed by the faculty, who regarded the proceeding with suspicion as unauthorized and irregular.

There is a Student Council, but it has little power, and that little is not always exerted on the right side. Its ineffectiveness in a crisis was shown last year, when a mob of a thousand students wrecked the Star Theater, a nickel moving picture show, whose proprietor had offended them by putting out a disorderly student. On the following night they smashed in the windows and demolished the piano and furniture. The Mayor, the fire department, and the few policemen the town affords were powerless in the hands of the students. President Angell was sent for and made a speech to the students, but they paid no attention to him. Dean Hutchins, who is as highly respected as any professor, also appealed to them in vain. The theater, an adjoining saloon, and the fire department claimed damages to the amount of $3500, but a settlement was finally made for $1000, and the criminal charges dismissed. The Student Council raised a large amount of money for the defense of fifteen students arrested, some of whom were quite innocent, but it made no attempt to search out the more guilty parties, and has done nothing to prevent the recurrence of such an affair in the future. Of course, theater disturbances are not unusual elsewhere, being established customs in some Eastern universities, and the anticipated damages paid for in advance, but the lack of official control and of self-control points the way to a needed reform. The Student Council having failed to ameliorate the fall rush, the faculty Senate took the matter in hand, and, among other regulations, pro-

vided that it be held in the daytime, whereupon the Student Council passed a different set of regulations, putting the rush in the evening, as formerly. Athletic affairs are still in confusion, in spite of or because of the fact that students, alumni, faculty, and regents have in turn tried their hands at rules and management. Michigan withdrew from the Western Conference a year ago because of dissatisfaction with the eligibility rules.

As I have said before, all State universities look alike to the Easterner. Yet in reality they all differ among themselves in language, institutions, and laws as much as do Yale, Harvard, and Princeton. I shall have failed in my task if I do not make plain some of the grosser distinctions as the five here taken into consideration are in turn described. Of course, each of the universities regards itself as responsible for the education of the people of the State, and as neglecting its duty if it fails to provide training in all of the common professions except divinity. But these professional schools, though having a certain specious equivalence in the catalogues, are in reality very unequally developed, and the absence or overgrowth of one of them shifts the center of gravity of the institution. For example, the University of Michigan is sharply differentiated from the other four universities — those of California, Wisconsin, Illinois, and Minnesota — in that the State agricultural college is not a department of the university, but is a separate institution, located at Lansing. This does not make much difference with the composition of the student body, for until recently the number of agricultural students of collegiate grade in the State universities has been absurdly small, but it cuts off the university from the receipt of the funds given by the United States Government for the support of agricultural education and research. The States that have separated the agricultural college from the university in order to appease local ambitions have suffered

from it, because there is a great loss of money and still more of efficiency through the duplication of buildings, laboratories, libraries, and professorships. It is, of course, the departments of Chemistry, Biology, and Engineering that are most strengthened by the presence in a university of the agricultural courses and experiment station work. A minor effect on undergraduate life is that Michigan, unlike the other four universities mentioned, has no military drill for the students, the Didaxia of Polemitactica never having materialized. The educational forces of the commonwealth are still further scattered by putting the School of Mines at Houghton, on the Upper Peninsula, which is practically another State, instead of making it a department of the university, as in California and Minnesota.

But by the law of compensation, to which we are accustomed to refer facts not otherwise explicable, the University of Michigan has developed larger and stronger schools of law and medicine than are to be found in the other State universities. The Law School is, in fact, the largest in the country except that of New York University. It draws nearly 70 per cent of its students from outside the State, and the fees of the nonresidents, though only $65 a year, $10 more than for Michigan residents, more than pay the salaries of all its professors. At present it requires only a high school preparation, but a six-year combined course is recommended to the students, and a year of collegiate work will soon be required for entrance.

In the medical department the six-year combined course is now compulsory; that is, two years of collegiate work are necessary for admission. Here, also, more than half the students come from other States. It is the most striking exception to the rule that a first-class medical school cannot be maintained outside a large city, for Ann Arbor has only 16,000 population besides the students.

Three duties has a State medical school: to train prac-

titioners, to advance the science, and to promote public hygiene. The University of Michigan performs all these well. It has good hospitals under its own management, including a psychopathic ward with a building of its own. It was in Professor Novy's laboratory that the existence of the bubonic plague in San Francisco, which the Californian authorities were denying, received an unexpectedly complete demonstration by a student who accidentally imbibed a few millions of the pernicious protozoa. The university is now beginning a campaign of education against tuberculosis, which will cover the entire State.

Another movement for the benefit of the State is forestry. More than half of Michigan is still wild, unsettled land. Six million acres, one sixth of the entire State, have reverted to the State on account of nonpayment of taxes. Most of this is burned-over pinery and stump waste. Professor Filibert Roth, of the university, is forest warden, and is training his young men, by a college course of five years and practical experience in the forest reserves in his charge, to reclaim and make profitable to Michigan its idle territory.

A new course will be started in 1910, conservation engineering. It will be given jointly by the Literary, Law, and Engineering departments, and will extend over a period of six years, leading to the final degree of master of conservation engineering. The purpose is to train men for the work of conserving, developing, and utilizing the resources of the country, especially the water power; improving agriculture, and ameliorating sanitary conditions.

The Engineering Department is by far the largest of the vacational schools, and offers some unusual courses. At Princeton and at Yale I was repeatedly asked: "Have you seen the tank yet?" At Michigan I was asked the same question, but it had a different significance. The tank that is Michigan's pride is a canal 300 feet long, 22 feet wide, and

10 feet deep, in the laboratory of marine engineering. Boats ten feet long, carved out of paraffin, are run back and forth through this by trolley, and the dynamometer records the resistance. In this way the best possible curves for the hull of any vessel can be worked out experimentally. The field facilities of the Department of Engineering have been enlarged by the gift of 1500 acres on Douglas Lake as a summer camp.

It is often said that a summer school can only prosper in city universities. Here again the experience of Michigan contradicts the generality. All departments at Ann Arbor are in full blast for eight weeks, and the work done deserves and receives full credit. In fact, the work is of a more advanced character than in the winter terms, and the proportion of graduate students is very much greater. In the summer session of 1908 there were 1077 students, representing forty-two States and Territories and sixteen foreign countries. About a fifth of them were college graduates, having degrees from 104 different institutions. In the medical department 35 per cent were college graduates and 14 per cent practicing physicians.

The summer school movement is one of the most important developments of university education in recent years, and will be discussed at some length in later chapters, but I must say here that its chief advantage, in my opinion, lies not in the utilization of the plant and the shortening of the college course, but in that it brings back to the university men and women engaged in all lines of professional work. Teachers in schools and colleges who want to learn at first hand the latest news from the frontier of knowledge and to acquire the new ways of pedagogy; doctors who want instruction in recent methods in medicine and surgery; engineers who need help in some novel problem; inventors who desire an opportunity to work out an idea; and ministers who wish to get into the current of the thought of the day

or to study the newer methods of philanthropy, — all have come to realize that the university can be of some use to them. Many of these are not candidates for an advanced degree, do not care for a degree, and cannot be induced to work for one, but want some man's ideas or technique and will go after him wherever he may be. This class of "special students," useful for swelling the roll of the graduate school, but sneered at by rival institutions, and viewed with suspicion by the Carnegie Foundation, will, I think, prove to be an important and wholesome influence in our universities. It is generally recognized that one of the drawbacks of the teaching profession is the constant contact with immature minds. The graduate students who have never left school retain their attitude of pupilage, but the returned graduate will exert a countervailing influence on the psychology of the professor. The returned graduate is self-reliant and independent, also intractable and undeferent, being himself accustomed to deference in his local circle. He is impatient of red tape and intolerant of slouchy teaching, and he has a contempt for pretentiousness in other people. His ideas are practical and will tend to counteract excess of academicity. The special student is now being brought into the university circle chiefly by the summer school, but he will not confine himself to that.

There is another way of effecting a closer union of State and School besides this of bringing the people to the university, and that is bringing the university to the people. In the first the University of Michigan has been preëminently successful. In 1880 there was one Michigan student in the university to every 2407 of the population of the State; in 1900 the ratio was one to 1206; in 1907 it was one to 973. In the second of the duties or opportunities, that of university extension in its various forms, such as farmers', teachers', and mechanics' institutes and courses, correspondence teaching, and work in lecture and library centers, Michigan has

not been so active as some of the other State universities, notably Wisconsin.

An opportunity for expansion into a new field seems to me to be afforded by the development of the educational department of the university. Some universities, like Yale, Princeton, and Pennsylvania, give little or no attention to the training of teachers. Others, notably Columbia and Chicago, have large and well-endowed teachers' colleges, with model schools for practice and experiment. Michigan belongs by its history in the latter class; for, as I have explained, its connection with the public school system has always been close. President Angell in 1874 recommended that instruction in pedagogy be given, and five years later the first American Professorship of the Science and Art of Teaching was established. The obstacle to the further development of this work at the present time is the lack of facilities for practice teaching, because the university has no model school, and the schools of Ann Arbor do not give sufficient opportunity for such work. Under these circumstances it seems to me that the question of training, at least for high school and college work, could best be solved by sending the advanced students into the high schools of the State. In this way the high schools could add a fifth year or strengthen the fourth, giving a greater variety of courses at very slight expense. Local school boards cannot afford to hire a competent instructor for the three or four students who may wish to take Greek, or chemistry, which is getting to be as rare as Greek. Therefore students are either shut out from certain lines of collegiate work for lack of preparation, or such classes are taught by an overbusy principal or by an incompetent assistant, who has to study the next lesson over night and even then sometimes to dismiss the class before the bell rings to prevent being carried over into unexplored territory. There could be a special peripatetic faculty for such work. The circuit rider pro-

fessor would visit each high school in his district once every week or fortnight to give a lecture or conduct a recitation, and to see that the class drill is thoroughly done by the teacher in training. The objections usually urged against such inexperienced teachers would not hold in this case, because they would be giving their own specialties under the direct control and guidance of the university professor, with whose methods they are familiar. That is, the high school pupils would then be under the same kind of instruction as most of the lower-class students in large universities. The teachers in training would find out whether they were fit for such a profession; they would get credit on their university course for such practical work, and they would be partially self-supporting. The pupils in the town could remain at home for a year or two longer, thus saving themselves expense and relieving the university of much of its elementary work and the embarrassment of their youthful spirits. The Massachusetts Legislature has before it a proposal to utilize the high school buildings for giving a complete college course in every city. If such a plan is not impracticable in Massachusetts, it would be easier to introduce where the State university system prevails, especially in Michigan, where it would be merely carrying out the original scheme of the university. It is primarily a question of which is the more mobile, a professor or a class. At any rate, we must recognize the fact that both are more mobile than they used to be, whether the centripetal or the centrifugal force prove the stronger. Our colleges seem to be still in the stagecoach period, unmindful of the new fields opened to them by trolley and express.

The next step in the future of the university should be its expansion in this or some other form until it fills out its foundations, which were from the beginning made to coincide with the boundaries of the State. At the same time the superstructure must be raised in accordance with the

design of its founders. That it has been so far predominantly an undergraduate institution is not to be hastily set down to its discredit. It means rather that the university has done conscientiously the duty which lay nearest. All of the State universities have been swamped with undergraduates and have not yet been able to provide buildings and instructors fast enough to accommodate them. But now it is felt that the time has come to demonstrate that a State can provide for its citizens not only the higher education, but the highest. Like the other State universities, Michigan is now making special efforts to develop its research work. In response to the pressure of the younger element, of which I have spoken, and in particular a frank exposure of the deficiencies of the institution in the *Michigan Alumnus*[1] the last year has seen a great change in this respect. The latest report of the secretary of the Graduate Council, April, 1909, gives 258 graduate students, including those in the professional schools. Of these 93 were in the summer session. This is an increase of 135 per cent in the last six years. About one quarter of the number are working for the doctorate, the most popular departments being English, philosophy, Germanics, chemistry, and physics in this order. In the last chapter I gave a long list of monographs and periodicals published by the University of California, for which the University of Michigan can show no parallel. There are, however, three periodicals and a "Humanistic Series," in which three volumes of valuable classical studies have been issued.

But it must be remembered that the explorations and investigations of the University of California have been made by the aid of special gifts, and the University of Michigan, although it has a very large body of alumni, has received no such extensive donations or bequests.

[1] Vol. XIV, p. 353. See correction of figures and further discussion in Vol. XIV, pp. 397, 399, and Vol. XV, p. 287.

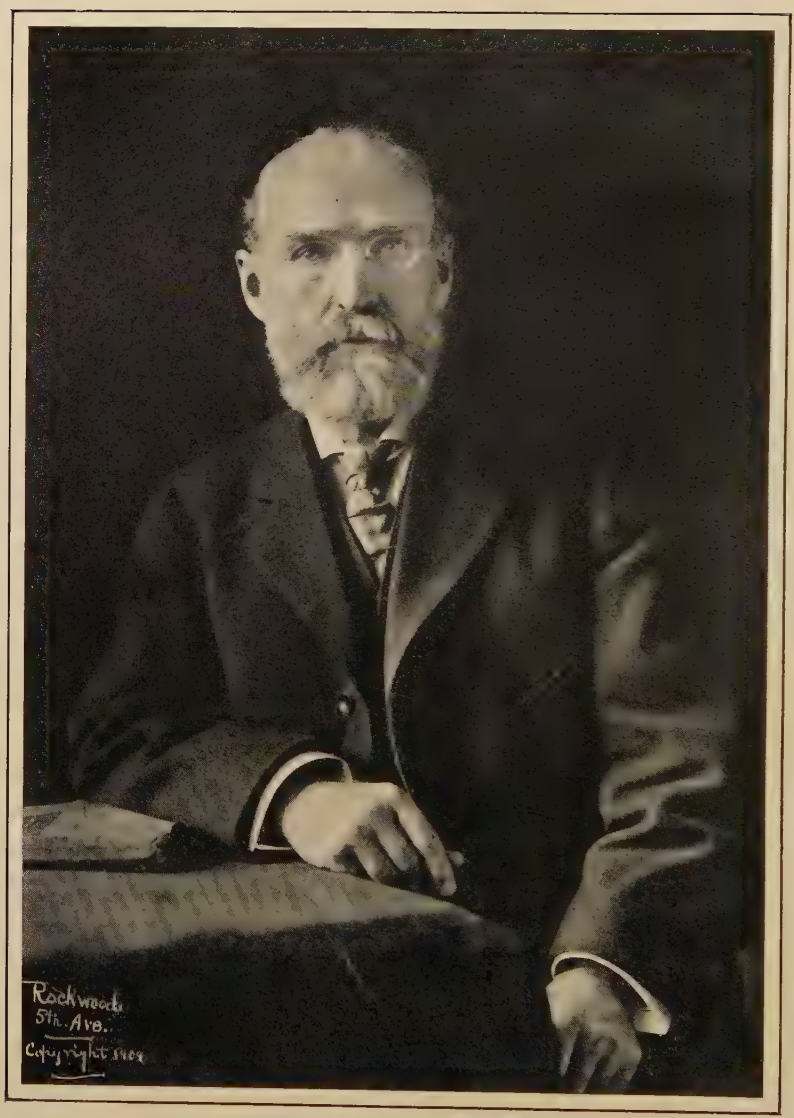
The university authorities have doubtless been wise in their policy not to spend the people's money on architectural display so long as the incessant demand for room continued, but this is no reason for the complete disregard of harmony and system in building. I have alluded to the similarity in spirit and principles between Harvard and Michigan. The resemblance extends to their architecture. The campus in both cases has been built up on the elective principle. The arrangement of the buildings is much the same as when a child dumps his Swiss village out of the box on the floor. In Michigan the architectural department has prepared plans for the development of the campus, but no regard is paid to them in the placing of buildings.

There is no agreement as to style, material, or color. The most recent addition is in the greatest possible contrast with all the others, and it has been placed in the most crowded part of the campus, twenty feet out of line with its neighbors. This is the Alumni Memorial Building, more commonly called either "the D'Ooge's Palace," in honor of the distinguished professor of Greek, who was instrumental in getting it, or the "mausoleum" by those who always associate marble with tombstones. There was much disappointment among the students because this building does not provide their much-needed commons and clubrooms, but will contain the offices of the alumni association and the paintings now hanging in the library. There seems to have been a feeling on the part of the promoters of the building that it would be a desecration to have eating and playing in an edifice sacred to the memories of fallen soldiers. But Harvard, surely an authority on academic etiquette, finds no impropriety in using a memorial hall for such purposes, and there is classical precedent for the custom of honoring the heroic dead by feasts and games.

The well-wooded campus makes a pleasant impression on the visitor, and many of the buildings, individually con-

sidered, are handsome and well adapted to their purposes. There is a good deal of building going on this year. The new dental building, just completed, of red brick with stone trimmings, is admirably arranged and equipped. The four-story chemical building, now being erected of iron-shot brick with a terra-cotta cornice, measures 230 feet by 130, and is well lighted by two inclosed courts, one of them on the lower story occupied by a large amphitheater. On a hill beyond the campus the visitor's eye is attracted by the glint of a copper dome, with minor bulbs like onion sets sprouting up around. This will house the new 37-inch reflecting telescope which Professor Hussey will use in adding to the collection of double-stars that he began at Lick. Between the observatory and the campus is Sleepy Hollow, which will now have to change its name, for it has been bought by the Woman's League as a playground for the girls. Near by is the Barbour Gymnasium, which is more than a gymnasium, for the women in the university have made it the center of a social life of their own, which does not, however, interfere with a due amount of association with the opposite sex both in work and play. Here they give their receptions, dances, teas, plays, literary entertainments, and "smokeless smokers," to which they may or may not invite the men, just as they please. This has cultivated in the women students a spirit of independence and self-reliance without developing any antagonism between the sexes. The women are, on the whole, treated with fairness; that is, they receive the treatment they individually merit. Some of the fashionable fraternity set refuse to invite them to social events of importance, but that is not altogether an evil. Since Michigan was the first of the greater universities to adopt coeducation, we may expect a similar development of social life in the other universities. It is sufficient to say that none of the dire prophecies made in 1871, when the women were admitted, have come to pass.

The women of the university, as was to be expected, were ahead of the men in establishing a social center. Now, however, a start has been made toward providing a place where all the men students may feel at home, by the purchase of the residence of Judge Cooley and its conversion into a clubhouse, the Michigan Union. There are now in the university twenty fraternities in the literary department of college and thirteen in the professional schools. All these have their own houses, as have also the nine sororities. Then there are ten sectional clubs of students from a particular State or city, six literary and debating societies, and six musical organizations, which, with the athletic teams, church gilds, etc., make up a total of 176 student associations. Yet an analysis of the membership shows that less than a tenth of the students take part in any of them except the fraternities and sectional clubs. It is evident, therefore, that the university as a whole is not overorganized, as is commonly believed. The real problem of the great universities is how to reach the submerged nine tenths and to give them a little share in such voluntary student activities. I must not omit, though I can merely mention, a movement that is apparent in many of the State universities, but has reached its highest development so far in Michigan — that is, the establishment of extra-territorial religious instruction. There are four buildings supported by the churches for work among and by students. The Ann Arbor School of Religion under the presidency of Professor R. M. Wenley gave in the fall of 1909 fifty-seven classes each week in Christian philosophy and ethics, biblical study and church work, with a total attendance of 704 students. This association, though having no official connection with the university, takes the place of the missing faculty of theology. In this way another Tappan dream is coming true and the State university is made complete.



CHARLES RICHARD VAN HISE,
President of the University of Wisconsin.

ENROLLMENT IN ALL DEPARTMENTS OF THE UNIVERSITY OF MICHIGAN FOR THE LAST TWENTY YEARS

Years	Literature	Engineering	Medicine	Law	Pharmacy	Homeopathy	Dentistry	Graduates (Literature)	Total	Summer Session	Grand Total[1]
1888–89	759	—	371	400	106	73	108	65	1882	—	—
1889–90	923	—	372	533	83	72	103	84	2153	—	—
1890–91	1080	—	375	587	91	71	132	95	2420	—	—
1891–92	1237	—	370	658	81	79	188	93	2692	—	—
1892–93	1375	—	344	639	82	63	189	116	2778	—	—
1893–94	1310	—	382	607	60	27	185	117	2659	—	—
1894–95	1437	—	389	670	78	19	186	86	2818	95	2864
1895–96	1130	331	452	675	83	27	189	74	2917	187	3014
1896–97	1183	284	477	584	72	47	198	86	2878	324	2975
1897–98	1257	277	437	765	79	61	223	76	3114	225	3223
1898–99	1210	245	445	765	81	68	234	75	3059	235	3192
1899–00	1253	280	500	837	76	70	247	90	3303	263	3441
1900–01	1261	359	563	873	71	71	273	108	3482	404	3712
1901–02	1293	489	513	853	68	60	203	107	3508	461	3709
1902–03	1295	609	455	866	70	75	149	100	3529	462	3792
1903–04	1319	803	418	865	65	69	94	103	3659	524	3957
1904–05	1323	993	376	877	69	67	132	94	3832	551	4135
1905–06	1457	1165	369	902	78	82	131	109	4180	813	4571
1906–07	1578	1208	371	768	94	81	177	113	4282	1034	4746
1907–08	1660	1353	390	791	101	82	168	135	4554	1070	5010
1908–09	1680	1352	361	706	102	84	192	160	4637	1077	5223

[1] After deducting names of students counted twice.

CHAPTER VII

UNIVERSITY OF WISCONSIN

IT is impossible to ascertain the size or location of the University of Wisconsin. The most that one can say is that the headquarters of the institution is at the city of Madison and that the campus has an area of about 56,000 square miles. All of the people in Wisconsin, not to mention other States and foreign countries, are eligible as students, and a very considerable proportion of them do receive instruction from the university in one form or another. How many nobody knows. It is equally impossible to answer intelligibly such easy questions as what is the length of the course, where are the laboratories, and how many books are there in the library. The length of the course varies from ten days to ten years. The laboratories are wherever there is machinery in action, industrial or social, with which the students care to experiment. If we go into a local electric light and power plant in any part of the State, we may happen upon a group of advanced students making an investigation of it. A student in accounting is going over the books; a student in hydraulics is determining the efficiency of the water power; a student in electricity is testing the dynamos and lights; and a student in sociology is studying the wages and condition of labor in the plant and associated factories. Their reports, carefully worked out in the office of the Commissioner of Railroads, form part of the system by which the State watches over all its public service corporations, and may be used as theses in the university. There is a triple

advantage. The State gets for little or no money the services of a number of honest and well-trained investigators, on their mettle to make a reputation for good work, for by it they may secure a position in State or private service. The local corporation welcomes them because its plant and system gets a thorough overhauling, and the inspectors are often able to point out leaks and wastes and to suggest where it would pay to call upon an engineer to make changes. And the students gain the inestimable advantage of being engaged in something worth while on which more depends than a good mark or a teacher's reprimand. The thirst of adolescence for real work and impatience with shams and playthings of all kinds should be recognized and utilized in our educational system.

The library of the University of Wisconsin is as hard to define as the laboratory. To count the books is like counting the little chickens around a coop; they run in and out too fast. It borrows rare books and files of old newspapers needed by research students and is equally ready to loan to other libraries and universities inside and outside the State. It is different at Oxford, where it requires a formal vote of the Vice-Chancellor and ten college heads, professors and M.A.'s, to get a book out of the Bodleian Library.

Nobody can tell exactly what are the limits of the library. There is a big building between the two capitols, or, rather, between the capitol and the university, which is always open and always full of students. If there is any truth in the saying that you can take the pulse of a university in its reading room, the University of Wisconsin is in fine, healthy condition. The building was put up only eight years ago, at a cost of $610,000, but it is already overcrowded, for the library has increased in size since then by 120 per cent. It is still not large, about 135,000 volumes, including departmental libraries, which gives Wisconsin eleventh place in the matter of books among the fourteen

universities considered in these articles. But in the same building with the main university library and practically forming a part of it are the libraries of the State Historical Society and the Wisconsin Academy of Sciences, Arts, and Letters, which more than double the number of volumes. This is not all, for Wisconsin has a well-organized system of free libraries, which are closely connected with the university. There are about a million volumes in the school libraries alone, and nearly as many more in the 156 public libraries. Then, to meet the needs of localities and individuals not adequately supplied by the public or the school libraries, there are the traveling libraries, which circulated last year 122,093 volumes, a larger number than any other State circulates in this way. When I was in the office of the director of university extension, he told me of an application he had recently received from a young man in the backwoods in the northern part of the State, who wanted to take a course in history under the direction of the university. I asked what he could do for books, and the director answered that he had just telephoned to the secretary of the Free Library Commission to send him out a box of twenty-five volumes. The public libraries are becoming secondary centers for the radiation of university influence; through them books will be supplied to study classes all over the State and the work of the correspondence students watched and guided. The State Library School joins with the university in giving a combined college and library training course, and the students in their closing year are sent out into the libraries of Wisconsin for "field practice." Now the Library Commission and the local libraries are independent of the university, and that is the most interesting thing about the Wisconsin system, the way the various educational and administrative departments work together in harmony, whatever may be their official relationships. It is very confusing to the inquisitive stranger who wants to

confine his attention to the "university," and not have to go into the political, social, and industrial life of the whole State.

It would be, of course, possible to leave out of consideration all the things that the University of Wisconsin is doing and the traditional university is not; to lop off the summer session, the artisans' courses, the institute work, the governmental functions, the correspondence school, the experiment station, the dairy school, the stock judging, and all that sort of thing, thus trimming down the university until it is comparable in size and function with other universities, but if we do that, we have left a bleeding stump, not at all the real University of Wisconsin, which is like a living tree spreading its branches and roots throughout the State in indefinable ramifications. Therefore I shall not attempt to confine myself to what some would call "the university proper." The State university properly includes all that the State is doing for the higher education of its people, and it is the glory of Wisconsin that it is interpreting this definition in the widest sense.

The government of a Western State has four parts — executive, judicial, legislative, and educative. But these are not distinct, and in the development of the system the fourth is as closely connected with the other three as they are with each other. The aim of some State universities is to keep out of politics. The University of Wisconsin is in politics and feels that it belongs there, not in the sense of being a football of opposing parties or attached to the fortunes of a political boss, but as taking an active part in administrative work and in guiding the policies of the State. In some States the president of the university only goes to the Capitol once in a biennium to beg for his allowance, in company with the representatives of the other charitable and penal institutions. The faculty also religiously keeps away, except perhaps the professor of political science may

take his class in civics into the gallery of the House of Representatives to show them "how the laws are made." But in Wisconsin professors may be seen almost any time in the Capitol, not working the officials for bigger appropriations, but working with the officials for the good of the commonwealth.

The main building of the university is of the stately domed type characteristic of the American capitoline order of architecture. It looks so much like the State House, which stands on the next hill, that a stranger might easily mistake the one for the other, and it would not be a serious blunder if he did. But it makes it harder to find a professor than where he confines his beat to class room and study. When I inquired at the university for Professor Balthasar H. Meyer, I was told that he was at the Capitol, presiding over a meeting of the State Railroad Commission. When I had walked over to the Capitol, I was informed he was conducting a seminar at the university. I tried to find Dr. McCarthy in the legislative reference room at the Capitol, and they told me he was on the campus assisting in the coaching of the football team.

I started in to get a complete list of all the members of the faculty who were doing public work of some sort in an official capacity, but I had to give it up, for the list became too long to print before I had found them all. The list I obtained, however, had the names of forty members of the instructional force who were filling administrative or advisory positions in the State or Federal service. Among them were the following: State Geological and Natural History Survey, Free Library Commission, State Forestry Commission, Conservation Commission, State Fish Commission, State Park Board, State Board of Health, State Board of Control, State Tuberculosis Sanitarium, State History Commission, State Live Stock and Sanitary Board, State Hygienic Laboratory, State Railroad Commission,

State Board of Assessment, State Sealer of Weights and Measures, State Butter Makers' Association, State Board of Agriculture, United States Reclamation Service, United States Geological Survey, Legislative Reference Library, United States Conservation Commission, etc.

This shows how far Wisconsin University has departed from the old-fashioned ideal of scholarly aloofness and sequestration and is taking what appears to be its ultimate function, that of a bureau of experts to the State government. It should be recognized that a State university is not doing its full duty unless it serves the people, both officially and unofficially, as a general information office, to which they can apply for the technical and scientific knowledge needed in their daily life and work.

As will be seen from the above list, the offices held by members of the faculty are mostly those classed as non-political positions; that is, they carry with them little money, prestige, or party power. They are, however, positions of usefulness and responsibility, those in which the general public is beginning to realize that some special proficiency and training are required. Such positions must increasingly predominate as our political system becomes more complicated, and it becomes apparent that the old-fashioned, American, all-around, interchangeable office-holder cannot run everything satisfactorily by his intuition and common sense. The line that used to be sharply drawn between the scholar and the man of affairs, between those who knew a great deal and could not do anything and those who had to do everything and did not know much about it, is being wiped out in Wisconsin.

Under the influence of university men Wisconsin has become the recognized leader in progressive and practical legislation, the New Zealand of the United States. But I am here concerned with the other side of the question, the effect upon the university of this active participation in the

affairs of the outside world. This, so far as I can see, is good. For one thing, it increases the respect of the students for a professor when they find that he is able to do the things he is teaching, that he is looked upon as an authority even when he gets off the campus. Young people sometimes get the idea, among the other strange notions that come into their heads, that a professor may have chosen the quiet life of the scholar not so much because of his superiority to the world as because of his inability to cope with it.

Then, too, the fact that members of the faculty will have an opportunity to become leaders of men as well as teachers of youth makes the authorities of the university more careful in the selection of its instructors. If a man is a failure, if he does not have ability as well as knowledge, the fact cannot be kept safely hidden within the faculty circle, but is known to the outside world, always too ready to suspect college professors of inefficiency, and the university suffers in consequence. A State university like Wisconsin is set upon a high hill, watched from all quarters by friendly and unfriendly eyes. Its defects are conspicuous and swiftly penalized. This I believe to be a wholesome influence, in spite of the fact that the standards by which the outside world judges university work are frequently incompetent and unfair. For the college professor, as a rule, is too much sheltered from criticism and competition. Good teachers and poor teachers, men who stimulate their students, those who depress them, and those who do not influence them at all, have throughout their lives the same rank, reputation, and salary. There are no tests of efficiency applied to class-room work, and the president of a university has no way of finding out definitely which are his good teachers. If an instructor hands in unusually high marks or low marks, if he "flunks" 60 per cent of a class on examination, if his electives are overcrowded, if he is popular or un-

popular with students and faculty, it may mean that he is an exceptionally good teacher or quite the reverse. That is one reason why so much stress has been laid on research in the gaining of position and promotion. It provides an objective test by which all the men working in the same lines may be ranked with remarkable exactness. Administrative and advisory work outside the university provides a similar test of a somewhat different kind of ability. The old-fashioned college was composed mostly of teachers. To these were added during the last generation investigators. Now there are coming in a third class of men, who are largely occupied with professional work in a public or private capacity. That is, the university of the future will be composed of three classes: men who have the genius for discovering truth, men who are especially adapted to imparting it to others, and men who are successful in showing how it may be applied to the problems of life. It is unfortunately rare to find these three forms of ability equally developed in the same individual, so the next best thing is to bring them together in the same faculty, where they mutually strengthen each other and give the institution as a whole an unprecedented power in the community.

It must not be supposed that this third or utilitarian function was voluntarily adopted by the universities because it completes their educational effectiveness. On the contrary, it was forced upon them by the outside world, and many universities yet pride themselves on the degree with which they have resisted that pressure and maintained "the old-fashioned college in all its purity." The utilitarian departments were generally added from the most utilitarian of motives, because it brought more money to the support of the university. The most extensively developed of these departments, the agricultural experiment station work, was begun throughout the country generally in a faint-hearted way. Many of those who were engaged in it in the

early days of the movement had little faith in its practical value, and the work they turned out was apt to be of a sort to justify their skepticism. But they were gradually replaced by men of faith and enthusiasm, and finally faith became unnecessary, for it was proved arithmetically that such work paid, not in any remote or hypothetical sense, but literally and directly. I ascribe the prosperity of the agricultural department of the University of Wisconsin largely to the fact that it was the first to furnish an irrefutable demonstration of this in milk testers invented by Professor S. M. Babcock, chief chemist of the station. This, by giving a cheap, quick, and accurate method of determining the amount of butter fat in milk, has revolutionized the creamery business and the breeding of cows. The test for the amount of casein in milk recently invented in the Wisconsin station and the new methods of cheese making there developed are expected to do as much for making that industry scientific, economical, and profitable as has been done for butter making. When a university can prove that it has added several millions a year to the income of the people of the State, as the University of Wisconsin can, there is no difficulty about its appropriations. The only question asked by the Legislature is, How much more money can it profitably employ?

I find there are two ways of making a Wisconsin man mad. One is to call the university "the Harvard of the West," and the other is to call it "a utilitarian university." Which remark will produce the resentful reaction depends on the particular student experimented upon. One who resents the first remark does not mind it so much if Harvard is alluded to as "the Wisconsin of the East," for he has hopes that Harvard may in time come to deserve it, now that it has added departments of applied science, in which a use is found for everything, including Münsterberg. Wisconsin men have had a special liking for Harvard ever since last

June, when President Van Hise received from Harvard the degree of LL.D. as "president of the leading State university." The remark was made in Latin, the customary dialect of the Harvard Yard, but, with their usual enterprise, the Wisconsin men found out what it meant in a marvelously short time, and seem to be pleased by it, although that is queer, because it was nothing more than they knew before.

The aversion to the word "utilitarian" on the part of some of the faculty and students arises from the fact that those who undertake to "write up" a university, including, of course, the present writer, naturally devote most of their attention to its peculiar and original features, and the University of Wisconsin has certainly been distinguished by its agility in discovering new ways of making itself useful to the people who support it.[1] But the reader must always bear in mind that such a view misrepresents a university as a newspaper misrepresents the events of the day by ignoring the doings of the peaceable and undistinguished citizens who form the most important part of the community, as peaceable and undistinguished teachers and students form the most important part of every university.

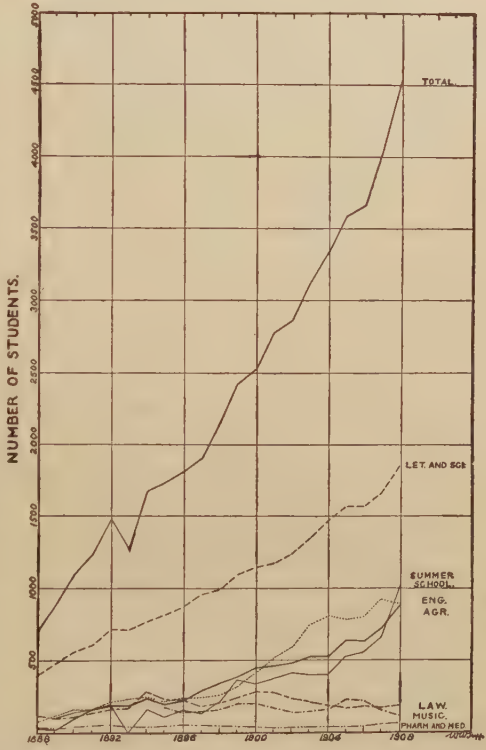
As an aid to the acquisition of a well-balanced view of the University of Wisconsin as a whole, let me say that, considering only the main departments, about half the students are in the College of Letters and Science, and the other half divided equally between the College of Engineering and the College of Agriculture. The distribution of graduate stu-

[1] Mr. John Corbin the year before visited many of these same universities and gave his impressions in a series of articles published in a volume entitled "Which College for the Boy?" Mr. Corbin, as a Harvard and Oxford man, looks at things from a different standpoint, so reading his book in connection with this will give something of a stereoscopic effect of reality. Attention should also be called to the interesting article by Mr. Lincoln Steffens on the University of Wisconsin, entitled "Sending a State to College," in the *American Magazine*, March, 1909.

dents gives the relative strength of departments perhaps better than any other numerical test. These number about 250 and are divided equally between the humanities and the sciences. Of the former group, about half are doing work in the linguistic departments and half in the historical and political departments. Of the scientific graduate students, about one third are working in the biological and two thirds in the physical sciences. It will be seen from this that Wisconsin is not an ill-proportioned university.

I expressed the opinion in an earlier chapter that the core of the American university of the future would be the group of studies now vaguely defined as social, political, and historical, because these occupy the central position in the curriculum, midway between the sciences and humanities, and include the best of each, by applying the methods of exact science to the study of man. They have, therefore, or can be made to have both cultural and vocational advantages of a unique order. In the University of Wisconsin this group of social studies seems to be assuming this central and dominant position, and it is interesting to watch its rapid expanse and projection into new lines. It was in this department that the specialized graduate research work of the university was first started, when Professor Richard T. Ely went to Madison in 1892, bringing with him the motto over the library door of Johns Hopkins, "History is past politics, politics is present history." But a man who takes such a revolutionary view of an academic study and who prefers to make his researches in political economy outside his library, cannot expect to be regarded, like other college professors, as a harmless innocent, so it is not surprising that Professor Ely soon became an object of suspicion. He was accused — this was in 1894, but it seems longer ago — of several heinous crimes, such as having entertained at his house a walking delegate. He was able to prove an alibi on this charge, and the Board of Regents not only vindicated

him of incendiary utterances, but took occasion to express the fundamental principle of the university spirit in words that should be quoted for the benefit of other institutions, or of the University of Wisconsin, in case the fight for free speech should ever have to be fought over again as it may at any time in case reactionary influence gain control of the institution:—



THE NUMBER OF STUDENTS IN THE UNIVERSITY OF WISCONSIN FOR THE LAST TWENTY YEARS.

"Without doubt some things may have been written not only on social economics, but also on history, hypnotism, geology, psychology, education, and law, with which many good people could not agree. We cannot, however, be unmindful of the fact that many of the universally accepted principles of to-day were but a short time ago denounced as visionary, impracticable, and pernicious. As regents of a university with over one hundred instructors, supported by nearly two millions of people who hold a vast diversity of views regarding the great questions which at present agitate the human mind, we could not for a moment think of recommending the dismissal or even the criticism of a teacher, even if some of his opinions should, in some quarters, be regarded as visionary. Such a course would be equivalent to saying that no professor should teach anything which is not accepted by everybody as true. This would cut our curriculum down

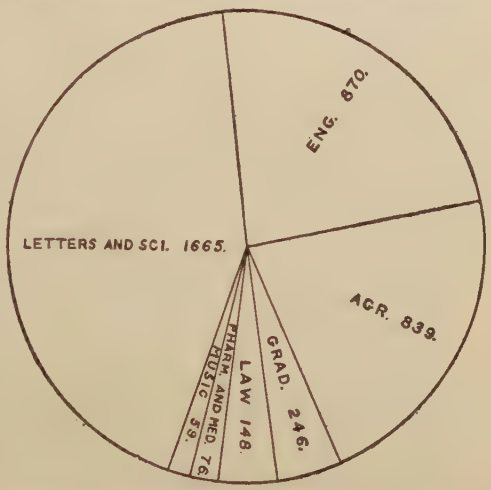
to very small proportions. . . . Whatever may be the limitations which trammel inquiry elsewhere we believe the great State University of Wisconsin should ever encourage that continual and fearless sifting and winnowing by which alone truth can be found."

The establishment of this principle soon after the school of economics was started accounts in large part for its prosperity and repute, for it opened the way to the free investigation of living questions, such as labor unions, taxation, corporation finance, insurance, and public utilities. The library is exceptionally rich in the material for investigation in these lines, and is the center of activity of the American Bureau of Industrial Research and of the American Association for Labor Legislation. On account of their training in practical affairs, the graduates of Wisconsin have always been in demand. A list of those who have taken Ph.D. in economics, 1892 to 1907, gives the names of twenty-six men and women who now occupy professorships in universities from Cambridge to Tokyo, or positions of similar importance in the public service.

The increase in number of State commissions for the investigation or regulation of transportation, banking, insurance, water power, forests, sanitation, factories, etc., as well as the extension of the functions of municipal and national governments and the establishment of philanthropic and reform endowments, opens fields for employment for a new class of business experts. The duty of preparing men for such work falls naturally upon the State universities, but they have mostly neglected it. So, too, have the universities of all kinds failed to provide training adequate for the magnitude and complexity of modern corporate and private business operations, although many of their graduates are predestined to this profession or what should be a profession. Wisconsin established a college course in commerce in 1900, being the first to enter this field, with the possible exceptions of Pennsylvania and

California. The course covers four years and requires two foreign languages. There is also a combination engineering and commercial course of five years. The commercial museum is in a rudimentary state, poorly housed and having no apparent connection with the closely related collections of the departments of agriculture and geology.

The injection of vocationalism into political economy and the allied departments seems to me to have a good effect. As taught in Wisconsin it could no longer be appropriately called "the dismal science." On the contrary, it is distinctly idealistic and inspiring, creative rather than critical. These young men are being taught not merely to study history, but to make it. They have no intention of being spectators all their lives; nor do they look upon themselves as reformers in the usual sense of the word. If the social sciences, as taught in Wisconsin, have lost in thoroughness and fairness through the abandonment of the attitude of a Martian, I am not competent to detect it.



THE DISTRIBUTION OF STUDENTS IN THE UNIVERSITY OF WISCONSIN, 1907–1908.

The spirit of the university somehow makes itself felt even in the formal language of the catalogue, as may be seen by quoting a few characteristic courses: —

62. Seminary in Special Criminology. A study of the nature, extent, varieties, and effects of contemporary wrongdoing, especially in politics and business, and an inquiry as to how far the

phenomena may be explained by changes in American life and society. *Second semester; W.*, 7 : 15 *to* 9 : 15. Professor Ross.

30. Administration of Punitive Justice. This course will deal with the methods of discovery, prosecution, and punishment of crime; the functions of the police, prosecuting officials and jury; and defects in the administration of criminal laws. The technical parts of criminal law and procedure will not be treated, but the study will be from the point of view of the student of political science. *Second semester; Tu., Th., at* 10. Associate Professor Scott.

26. The Theory and Practice of Legislation. A study of the methods of procedure of legislative bodies, and the preparation of the subject-matter and form of bills. The legislature is in session from January to June, in the odd-numbered years. *Throughout the year; M., W., F., at* 12. Dr. McCarthy and Mr. Hornbeck.

42. Public Utilities. A comparison of public regulation and public and private ownership of municipal utilities in American States and foreign countries, including constitutional and judicial limitations, delegation of legislative power to commissions, physical valuation, reasonable rates and service, organization of public employees, cost, efficiency, social and political results. *First semester; lectures, M., W., F., at* 8. Professor Commons and Mr. Dudgeon.

19. Contemporary International Politics. A course of weekly lectures on questions of international or foreign politics which are of special importance at the present time. May be elected in successive years as subject-matter is changed annually. *Throughout the year; W. at* 5. Professor Reinsch.

25. Exploitation of Natural Resources. A critical study of some of the special problems of conservation and reclamation in the United States. The economic aspects of Federal and State policies pertaining to public lands, forests, irrigation, drainage, and waterways, the relation of property rights to conservation. (This course is designed to follow and supplement the course on our natural resources offered during the first semester by President Van Hise.) *Second semester; Tu., Th., at* 9. Dr. Hess.

21. Agricultural Journalism. The lectures treat the history and technology of printing, history of agricultural journalism, survey of the present agricultural press, classes of agricultural writing, reporting of fairs, stock and corn shows, technical writing, and photography for the press. The exercises will include practice in the preparation of articles of the various classes,



University of Wisconsin.

CORRESPONDENCE STUDY CLASS AT THE BUCYRUS SHOPS, MILWAUKEE.

The two men at the lower right-hand corner are teachers from the university who meet the class every two weeks.

editing, proof reading, reviewing, interviewing, preparation of special articles, etc. *Second semester; two unit hours.* Mr. Marquis.

The last item is significant of two new tendencies manifested in Wisconsin and similar institutions, the introduction of journalistic training and the extension of the sway of the English department into the technological schools. In the University of Wisconsin journalism has now developed into a regular four years' course with laboratory work provided by the numerous official and unofficial periodicals. The Alumni Association offers a graduate fellowship in journalism, the holder of which edits the *Alumni Magazine*, and the *Daily Cardinal* offers several undergraduate scholarships. Journalists in general are as doubtful of the practicality of collegiate training for their profession as lawyers used to be of the value of law schools or farmers of agricultural colleges, but in spite of this natural and, on the whole, beneficial skepticism, the experiment is going to be tried in many places. Columbia University five years ago received a million dollars from Mr. Pulitzer of the *World* for the endowment of a school of journalism, but it has not yet been put into commission.[1] At Harvard it is proposed to establish the *Veritas*, a periodical which shall differ from all others in that it will contain only truthful statements. The daily published by the school of journalism of the University of Missouri proved so profitable that the Legislature intervened in accordance with the good old American principle that nothing run by the government shall be allowed to pay. It is in accordance with this principle that a State's prison is deprived of its industries whenever it becomes self-supporting; that the postal service is not allowed to enter the profitable branches of its business; that the Patent Office

[1] An interesting discussion by Mr. Pulitzer on what can and cannot be taught in such a course may be found in the *North American Review* for May, 1904.

is criticized if it shows a balance on the right side; that the *Bulletin of American Republics* was deprived of its advertising because it persisted in turning in money to the national treasury instead of taking it out; and the Panama hotels are compelled every year to "blow in" their surplus on extras. The rigid enforcement of this rule is rightly felt to be the only effective way of checking the tendency to extend governmental activities into industrial lines. I notice that the creamery of the University of Wisconsin is careful to limit its business so as to keep a small deficit. This is wise, for if it became profitable, it would probably be suppressed.

The development of technical journalism is an important movement, because there are more periodicals of this class than of the purely literary, and they have more influence on the people. Assuming that it is possible and proper for a university to train men for any vocation, here is one that should not be neglected, for high ideals and wide scholarship can make themselves felt in the editorial chair of a trade journal as they can in a pulpit, for which the college used to train its men. The splitting of the old college into literary and scientific sections and increased specialization in both directions had a curious effect on the students. One set were taught four or five languages, but did not have much of anything to say in any of them. The other set were crammed with facts, but were left without the power of expressing them intelligently. Now both wings of the faculty are coming to a realization of the need of getting for their students a little more of what is given to the other set; though, since the lack of words is a more conspicuous defect than the lack of ideas, the scientists are more keenly aware of the deficiencies of their form of education than are the humanists, and in various ways they are striving to remedy it. In Wisconsin one of the professors of English is assigned to the duty of superintending the scientific and

technical students in the writing of their theses and special reports, working with them individually and in small groups. There are special courses for the teaching of the various sciences, and in agriculture particularly the students have ample opportunity for acquiring the art of presentation in writing and speech. In fact, the task which has fallen upon the agricultural colleges to train thousands of adults in the use of scientific terms and in the application of scientific principles — an educational undertaking unprecedented in the history of the world — has developed a new style of expository literature, of which the best representatives are the bulletins of the Wisconsin and Cornell Experiment Stations. The young man who was called upon to stand before a class of farmers of untrained minds and unductile dispositions and to demonstrate the relative value of nitrogenous and phosphatic fertilizers or explain the calculation of the nutritive ratio in stock feeding, was compelled to strike new methods for himself. "He had to!" At first the professors used to tell the farmers about tuberculosis in the cattle. As this did not produce any impression, they used pictures, then lantern slides and colored models. Now they pick out an animal from a herd by the tuberculin test, bring it into the amphitheater, slaughter it, and cut it open before them. This is true pedagogy. I have been told by several persons who had reason to know that forcible and effective teaching is more common in the Western universities than in the Eastern, and the explanation given of this was that the students of the West were, on the whole, less well prepared and that the agricultural and other forms of extension work forced certain departments to give greater attention to the matter of the presentation of a subject. Other departments, through the competition of the elective system, were compelled to adopt similar methods, until finally the enlivening influence was felt in the remotest class rooms. In the same way, as I explained in talking of

Princeton, the humanistic professors have been obliged to increase their office practice to correspond with the individual attention given to students in the scientific laboratories.

The average male Freshman of the University of Wisconsin is nineteen years and seven months old. He weighs 137.3 pounds and he is 5 feet 7.5 inches high. He was probably born in Wisconsin, and his father is more likely to be a farmer than anything else. Thirty per cent of the entering class and 60 per cent of the graduating class are of foreign parentage. This indicates that foreign blood is more persevering or less enterprising than American, or something else. Half of the foreign fathers, in the case of both classes, came from Germany; next in number are those from Norway or the British Isles.

What the interests of the students are, outside of their class work, of course, may be shown by their societies, for in America, and especially in the West, nothing much is done without a constitution and an executive committee. According to the last *Badger* there are 130 organizations, including three dramatic, four musical, eight oratorical, eleven press and publications, twenty-five athletic, twenty-three fraternities, exclusive of the eleven sororities and three professional fraternities, seven honor societies, five class societies, three special women's organizations, three military, and twenty-four general university clubs, such as the medical, socialist, and Christian associations.

In comparison with the undergraduate activities of an Eastern university the most striking feature of this list is the popularity of oratory and journalism. In most institutions East and West the fraternities on the one hand and the departmental clubs on the other have sucked the life out of the old literary societies, but in the University of Wisconsin they still thrive. Two of them, Athena and Hesperia, have been for over fifty years in the university,



University of Wisconsin.

READING ROOM OF THE LIBRARY.

and they are not yet ready to retire on a Carnegie pension. The students who are selected to represent these societies or Philomathia, in the annual joint debate, choose the subject in the spring, so the summer can be spent in working it up. Even then their studies in the fall term are apt to be neglected. The faculty had to put a time limit on the preparation, otherwise the subject would be picked out a year ahead. The debate is printed by the university and sent to all the libraries and high schools of the State. Besides the intracollegiate debates, the university competes with Illinois, Iowa, Minnesota, and Nebraska, in debating, and with Chicago, Iowa, Michigan, Minnesota, Northwestern, and Oberlin in the Northern Oratorical Contest.

In connection with the student organizations mention must be made of the Cosmopolitan Club, since the Wisconsin club claims the honor of being the oldest, as it was started in 1903, and has led in the organization of those clubs into a national association which now has a membership of about 1500, representing fifty different countries.[1] Wisconsin has had a close rival in Cornell from the beginning, and it is a question to be decided in the near future which of them will be the first to build an international clubhouse.

Each of the local clubs is composed of practically all of the foreign students in the university together with a limited minority of Americans, and the remarkable thing about the movement so far has been the spirit of toleration and fellowship which has kept these diverse elements in harmony. For the foreign students are proud and sensitive and as alien to each other as to the Americans. But youth is the time and the college is the place in which hot discussion and

[1] For information on the Cosmopolitan Club movement see the reports of the two national conventions; also an article by Lewis Lochner, of Wisconsin, first president of the National Association, in *The Independent*, Jan. 28, 1909.

mutual chaffing are promotive of friendship, and it is not extravagant to anticipate that in later years, as some of these men come to discuss the same questions in earnest, they will carry something of the spirit of the clubroom into the diplomatic chamber.

In speaking of the University of Michigan I called attention to the changed conditions which had forced the State universities to pay more attention to the life of the students. Since it has become fashionable, even in the upper classes, for parents to send their boys and girls to college, there has been an increase in the athletic and society sets. The fraternities year by year set a higher standard of expenditure, which, though still modest compared with that of Eastern colleges, is sufficient to fix a gulf between the richer and poorer students.

In Wisconsin the efforts made by the university authorities in the last few years to look after the social and athletic affairs and the housing of students aroused some natural resentment among the students, and in this they had the sympathy of such of the faculty who cling to the old *laissez-faire* ideals. It is an unsettled question whether the social cleavage of the university can be prevented anyway. What is the use of faculty and students struggling with the question of whether tickets to the Junior Prom shall be $3 or $5, when this is only a small part of the expense involved in the affair? Whenever social entertainments become at all elaborate, then the principle of competitive expenditure, which is the basis of fashionable society, comes inevitably into play, and what equality can there be between a student who spends a hundred dollars on his week-end girl and one who has only twice that for his year's expenses? It might be better policy frankly to abandon such social functions to the fraternities and those who adopt their standards. Their aim in raising the scale of expenditure is of course to make them more exclusive, and the more

fully they accomplish this aim, the better it is, in my opinion, for the rest of the university.

There is among the young men of the University of Wisconsin as yet very little of that snobbishness prevailing in Cornell, Columbia, and Harvard, which consists in looking upon the young women in the university as their social inferiors and unfit associates. The fact that in Wisconsin, as in Michigan and elsewhere, there is a tendency to import girls for the Junior Prom and similar occasions, does not seem to me to contradict this statement. It is, in part, a natural tendency, as natural as to import a band or a speaker or clothes or mineral water. At every village dance the young fellow who can boast of an out-of-town girl has scored a social triumph. It is an expression of the principle of exogamy, which appears in all grades of society from savagery to royalty. The coeds are indeed often invited to the Prom, but there is an obvious absurdity in a girl's packing all her things in a trunk, leaving her sorority or boarding house, and moving over to a fraternity house, a few blocks away, while the escort whom she has dispossessed puts up with what lodgings he can find about town. Besides, as the young men tell me, they want "ornamental girls" for such occasions, and "who wants to spend a lot of money on a girl that he can see every day for nothing?"

Except in such cases as this, where the anti-democratic standards of the fashionable world infringe on university life, there does not seem to be much of any discrimination against the women of the university. And except for the undue devotion to social activities on the part of a small proportion of the students of both sexes there does not seem to be any "coeducational problem" in the University of Wisconsin. As I have shown in the article on Stanford University, participation in society does not bring down the grades of the women so much as it does of the men, but as usual the blame for the failures of both is thrown on the

women. I have also shown that the drift of the men away from the literary courses is as great in men's colleges as it is in coeducational colleges, so it is not fair to blame the women for this. I therefore can see no excuse for President Van Hise's action in promoting a movement for segregation in the University of Wisconsin.[1] The movement started, curiously enough, in the desire of Professor Ely to get more women into the classes in elementary political economy, which he feared was coming to be regarded as a purely masculine subject. It was taken up for the opposite reason by some professors from the monastic colleges of the East and had made considerable headway before it was disclosed. As soon, however, as it became known to the public, it was interpreted as an attack upon the basic principle of coeducation. The chivalry of the West was aroused, and the storm of indignation from the alumni and press all over the State put a stop to it. The committee of the faculty, which the president had appointed to investigate the question, never made a final report. The friends of the women had no difficulty in disproving the charges unofficially brought against them whenever these became audible. It was shown that the quality of the women students as a whole was not deteriorating; that more of them entered with advanced standing; that they did more advanced work; that they did not lower the standard of scholarship, but supplied their full quota to Phi Beta Kappa. It had been alleged that many of the women were coming to the university for a term or two in order to get into society, returning home as soon as they had made a sorority and acquired a useful circle of acquaintances. That is

[1] See his argument in favor of segregation in *Educational Review*, December, 1907. Also "The Movement against Coeducation," by Wardon A. Curtis in *The Independent*, Aug. 6, 1908. An excellent discussion of the working of coeducation, based on the Wisconsin experience of forty years, is to be found in the volume by Mrs. Helen R. Olin, "The Women of a State University."

undeniably true of some, but it was shown that the women, as a whole, were nearly as persistent as the men and improving more rapidly in this respect than the men. During the period 1870–1892, 16 per cent of the men and 12 per cent of the women who registered as Freshmen remained to graduate. During the period 1893–1908, 19 per cent of the men and 18.4 per cent of the women completed the course. The health of the women had not been injured by their college work, for of men who were graduated from 1869 to 1906, 5.8 per cent have died and of the women only 4.7 per cent. The proportion of women in the College of Science and Letters has increased from 29 per cent in 1887 to 45.9 per cent in 1908, but why that, or the fact that some elective courses are practically monopolized by the women or the men, should alarm any one I do not see. A college class is not a ballroom or a dinner table that it should be so nicely balanced. On the contrary, the chief benefit of free coeducation is that it tends to minimize the sex consciousness which the usages of fashionable society are contrived to exaggerate.

Compulsory segregation, however kindly intended, works to the disadvantage of the weaker party, so it is fortunate that there are to be no "Jane Crow" classes in the University of Wisconsin, at least not for the present. The agitation of such a question is always injurious, but the outcome was beneficial. As the attack upon Professor Ely established liberty as one of the fundamental principles of the University of Wisconsin, so the regents completed the triad by adding equality and fraternity when they, in June, 1908, passed the following resolution: —

"Men and women shall be equally entitled to membership in all classes of the university, and there shall be no discrimination on account of sex in granting scholarships and fellowships in any of the colleges or departments of the university."

President Van Hise, in the article referred to, advocated

two methods of segregation; one, that which I have been discussing,[1] providing separate sections for the two sexes in such subjects as political economy, ethics, and languages; the other providing vocational courses which would draw women away from the liberal arts department as the engineering courses have drawn off the men. This latter seems to me to deserve the name of "natural segregation" rather than the former, to which President Van Hise applies it. Not from such an unworthy motive, but because women have as much a right to training for the duties which nature or custom have assigned to them as the men have, the movement for higher education in housekeeping should be encouraged. That cooking and sewing are woman's work is popularly supposed to be one of the questions which were decided for all time "by the primordial protoplasm." We are becoming skeptical nowadays of such protoplasmic predestination, and fortunately we are not obliged to settle the destiny of woman for more than a generation ahead. But for the present it is clear that the main business of most women is in household administration and industries, and that this is an unorganized, unskilled, and uneconomical

[1] It should be understood that President Van Hise did not advocate the abandonment of coeducation or even such extensive segregation as President Harper established at the University of Chicago. On this point his own words should be quoted (*Wisconsin Alumni Magazine*, April, 1909): "I have been in favor of coeducation ever since I have been connected with collegiate work, for I believe that, on the whole, coeducation gives better results, both for men and women, than training in separate classes or institutions. In my recent address before the Association of Collegiate Alumnae in Boston I thought that I had made my position on the subject sufficiently plain when I said, 'Believing as I do that the adoption of coeducation in the West, which has led to a higher education of tens of thousands of women who otherwise would have had no opportunity to obtain college training, has been of immeasurable importance to the nation; believing as I do that coeducation gives satisfactory scholastic results for both sexes, I am in favor of taking such steps as are necessary to maintain coeducation in full vigor in the college of liberal arts.' In fact I have never expressed myself on any occasion as opposed to coeducation."

trade needing an educational uplift as much as dairying and journalism. Wisconsin has been somewhat slower than rival institutions in developing along this line, but next year the department of home economics is to be reorganized and established in Lathrop Hall, the handsome woman's building, which has just been completed.

I should be unjust to President Van Hise if I left the impression that his blunder in encouraging the segregation movement — it certainly was impolitic if nothing else — was characteristic of his administration in general. On the contrary, he has been very successful in developing the university during the five years he has been in office, and his plans for the future are aspiring and statesmanlike. Trained in a science, geology, which is unique in combining the historical and the utilitarian, he has kept in mind both the cultural and the practical needs of the institution. He has made it his special object to secure a recognition of the duty of the State to support research work in pure science, and at the same time he has brought the advantages of the university to classes of people who, because of distance or lack of preparation, have been hitherto thought to be beyond its reach. What he said of his ideal in his inaugural address may be taken with more confidence than is customarily given to such utterances, because he is a man of few words and never talks for the fun of it: —

"The final and supreme test of the height to which a university attains is its output of creative men, not in science alone, but in arts, in literature, in politics, and in religion. . . . For my part, I look forward with absolute confidence to the liberal support by the State of a school whose chief function is to add to the sum of human achievement. I am not willing to admit that a State university under a democracy shall be of lower grade than a State university under a monarchy."

When Professor Van Hise was elected president, there was strong opposition to him, both political and personal,

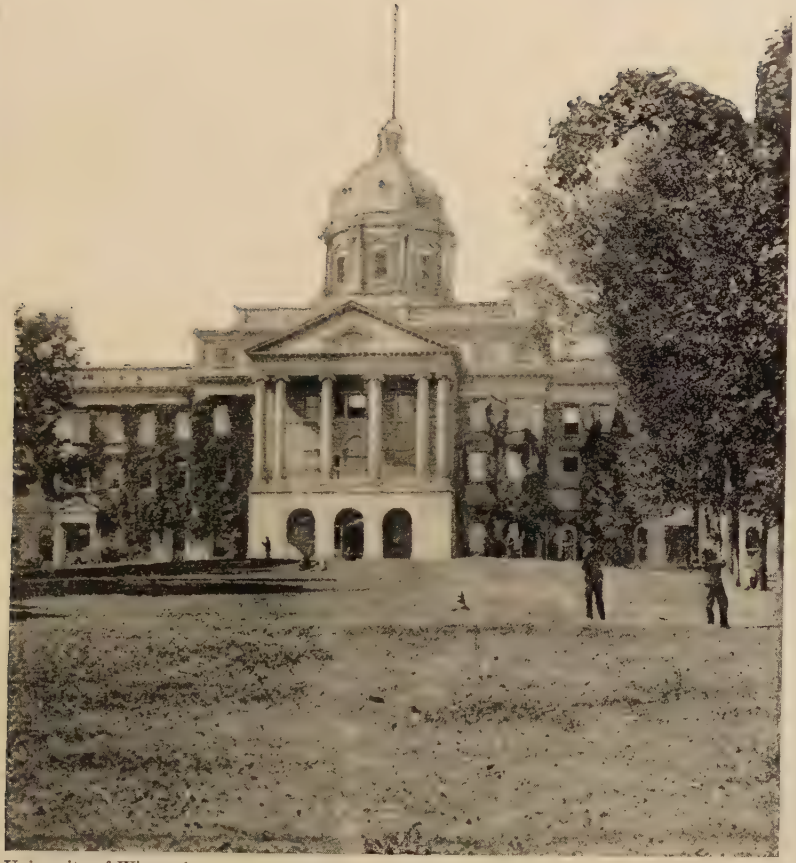
but he has overcome this feeling, and solely by the growth of confidence in his character and purposes, for he has none of the arts of popular politicians. In the West the ability to "jolly up" a crowd of any kind and to talk fluently and pleasingly on any occasion without saying anything worth while, is so common that it has come to be expected of every public man, and the lack of this in President Van Hise was, absurd as it may seem, the chief cause of his unpopularity at the beginning of his administration. One of the students told me of a Freshman who came to his dining club with the remark: "What do you think, fellows? I walked up hill with Prexy this morning."

"Well, did he say anything?"

"W'y, yes. Of course he was a little embarrassed at first, but I soon put him at his ease, and, do you know, I found him a very interesting fellow."

I tell this story because it seems to me to be characteristic of the change in attitude of the students as a whole; they thought him a little embarrassed at first, but have since discovered his real worth. In some respects President Van Hise reminds me of President Eliot, in his reserve, in his scientific turn of mind, in his knack of saying the right thing at the wrong time, and in his ability to pick good men for his faculty, the rarest and most valuable of presidential qualifications.

President Van Hise is planning now for a university of ten thousand students, which he expects within the present generation. The first of the buildings of the greater university has been erected, a heating plant of 10,000 student power. The architectural rearrangement of the campus is a difficult problem, in my opinion not yet satisfactorily worked out. The present buildings are without harmony or system, but it would not do to call the campus a *tabula rasa*, as was done in California, for many of them are too good to be discarded. One of the largest of them, the armory and gym-



University of Wisconsin.

UNIVERSITY HALL.

nasium, is as far as possible from the drill ground and athletic field. Chadbourne Hall, which is the only dormitory for women, and Lathrop Hall, which contains their lunch and club rooms and gymnasium, are on the opposite side of the campus from the proposed location of the other dormitories for women.

The most interesting feature of the president's architectural plans is his effort to solve the housing problem by the erection of two groups of dormitories, or, rather, student homes, along the lake shore, one for men and the other for women. The former are to accommodate 125 to 175 students each and the latter 60 to 100. Each hall is to be complete in itself, with dining, reading, and common rooms, built around three sides of a garden with southern exposure, on the opposite side from the lake. Each hall will contain some students from all departments and classes, a larger and more representative group than the fraternities, yet not too large for mutual acquaintance. Such a student home would be so attractive as to reduce the fraternity to its proper sphere, whatever that may be, and inter-hall athletics would largely replace the intercollegiate, with a greater chance of preserving the true amateur spirit. It is greatly to be hoped in the interests of the college world that this plan may be carried out, as there is no other institution experimenting on just these lines. The difficulty is to find the money to build them fast enough, for if two were completed every year, the students at the end of ten years would be more insufficiently accommodated than they are now unless the rate of increase decidedly slackens.

In beauty of situation Wisconsin's only rivals are California and Cornell. Its campus circles along Lake Mendota for a mile, while from its hills there is a magnificent view of the city and the farms, woods, and lakes round about it. But the campus owes its attractiveness to nature, not to art. Little has been done for its embellishment since the days

when the mound builders, who were apparently disciples of the Nietzschean Zarathustra, placed the eagle and the serpent on its hilltops. In fact, the fine arts have not yet taken root in the University of Wisconsin, which in this respect is behind the other State universities, and that is saying a good deal. There is, however, a school of music, and, following the example of Michigan, some of its courses are given credit on a par with other studies of the university. Architecture is not taught, at least not the kind that is known as "long-haired architecture"; the other kind, the structural, receives some attention in the College of Engineering, where valuable investigations on concrete construction have been carried on. Wisconsin has nothing to correspond with Yale's collection of paintings, Cornell's collection of casts, California's Greek theater, or Harvard's museums of natural history.

There has been no regular department of mining engineering, but that work is to be taken up in earnest next year, and it is characteristic of Wisconsin that a correspondence course in mining is established simultaneously with the four years' resident collegiate course. The newly organized College of Medicine has likewise this double aspect. It has as yet few students, but the group of men who have been called together to form its faculty are already hard at work on the two extremes of their science, research and popular hygiene. A visit to the attics of the chemical, engineering, and science buildings, where the medical department finds temporary lodgings, is like plunging into the atmosphere of Johns Hopkins; there is the same zeal for investigation and the same disregard for environment. On the other hand, when one hears the discussion of plans for tuberculosis exhibits throughout the State, and the testing of water and serums, it seems more like the University of Minnesota. There will be two years of medical work given at Madison, but the students will have to complete their medical course

elsewhere, for the University of Wisconsin has no hospital facilities.

The College of Law presents no original, or at least no spectacular, features. It seems to have pursued the even tenor of its way, confining itself to the training of practitioners, without taking part in the research, extension, and constructive work in legislation which has been carried on so vigorously in other departments of the university. I presume it would be impracticable to send the law Seniors around the State to act as justices of the peace for part of their laboratory work, as the teachers in training are sent into the public schools, but there ought to be some way of making the lawyer useful to the community, and, what is more important, of making him feel that he is.

The system of teaching fellowships just referred to is one of the new methods devised by the department of education for solving the problem of preparing teachers for secondary schools. Wisconsin is not yet ready for the step taken by California of requiring a year of graduate study of all teachers in the high schools, but the university is doing what it can to make it easy for the teachers to acquire this advanced work. A teaching fellow is to be assigned to each of the important high schools of the State, receiving from the university $225 and from the school $100. He will teach under the supervision of university officers and return to the university during the summer session for the completion of his graduate work.

To describe all the educational activities of the agricultural college would require another chapter as long as this. I am not sure that I can even count them straight. There is the "long course" of four years, with graduate work leading to Ph.D. in addition; the "middle course" of two years; the "short course" of two fourteen-week terms; winter and summer dairy courses of twelve weeks; a farmers' course of ten days, accompanied by a course in home-

making for their wives. This, I believe, is all at Madison. For the State outside there are farmers' institutes, co-operative work at county agricultural schools, butter and cheese scoring exhibitions, young people's corn-growing contests, milk production tests, tuberculosis demonstrations, spraying demonstrations, and inspection service of many kinds.

With such work as this the public is somewhat acquainted. More interest, therefore, attaches to the new fields into which university extension is being extended. Having done so much for the farmer, or, rather, very much more than I have indicated, the University of Wisconsin is turning its attention to the mechanic. The Morrill Act, which started all this in the United States, placed "instruction in the mechanic arts" on an equality with that in agriculture, but the development of the two branches has been astonishingly unequal. There have been comparatively few agricultural students taking the full course in residence, while the propaganda work among the farmers outside has been energetic and ingenious. On the other hand, all the work in mechanics and engineering has been done by regular students in four-year courses, and nobody thought of doing anything for the men in the shops. That this field should have been so long neglected is remarkable, because there was practically no demand coming from the farmers for vocational training, while in other industrial lines there has been the greatest eagerness for it. This demand has been partly met by the private correspondence schools, but not very satisfactorily, because, after the student had enrolled and paid his fee in advance, the sooner he stopped sending in papers the better for the school. It is estimated that $10,000 monthly is sent out of Wisconsin to Eastern correspondence schools. The university, in taking up this vocational training, does not confine itself to correspondence methods. When the work was begun in 1908, classes,

aggregating 263 students, were opened in eight large manufacturing concerns in Milwaukee, more than one tenth of their entire force. The companies provided and equipped class rooms and gave the men the time to meet the instructor, who came to them every two weeks. Artisans' courses have been established in the university similar to the shorter courses in agriculture, and the bright students in the correspondence work may be given scholarships sufficient to pay their expenses at the university for a brief period of study in the shops and laboratories there. In 1908 a bakers' institute, analogous to the farmers' institutes, was held in Milwaukee, in which experts in wheat and flour, food chemists, bacteriologists, and practical bakers took part. As a token of their appreciation of such work, the Merchants' and Manufacturers' Association of Milwaukee had a bill introduced into the recent Legislature which appropriates $50,000 for extension work for the next year and $75,000 for the year following. This was passed, and in addition $30,000 a year was given for agricultural extension and $20,000 a year for farmers' institutes.

When the extension work is fully organized, there will be a representative of the university, with two or more assistants, in each of the eleven districts into which the State is to be divided. He will have his headquarters at one of the public libraries, and will organize lecture courses, look after the correspondence students, provide officials and the public with information and expert assistance, advise young people as to the choice of a profession, and furnish books, clippings, and outlines for lyceum debates.

What will come of this rural free delivery system of education no one can tell yet. It looks like a big idea. At any rate, it is a logical development of the Wisconsin principles of breaking down the barriers which separate the life within the college from the life without, and of getting all the public agencies to working together. The normal schools and the

denominational colleges, instead of fighting the university, are affiliated with it, sending many of their students to the State university for the professional courses after they have finished the "Junior college" work. In 1904, when George Foster Peabody wanted to give the people of Georgia a demonstration of the advantage of one strong institution in a State instead of half a dozen scattered and weak ones, he chose Wisconsin as his object lesson, and chartered a train to take to Madison the Governor, members of the Legislature, trustees of the university, judges of the Supreme Court, and other prominent men.

The university receives its reward for making itself useful in popular appreciation and generous support. For the two years beginning July 1, the 1909 Legislature has provided about $2,500,000. Of this, between $700,000 and $800,000 comes from the regular two sevenths of a mill tax. For books there is a special appropriation of $50,000 a year, and for building $200,000 a year.

But however liberal may be the support given by a State to its university, it needs to be supplemented by private beneficence, for there are many things of the highest importance which do not appeal to the people, but may be discerned by some person of unusual foresight and knowledge of conditions. Such a person was the late William Freeman Vilas, who bequeathed his entire fortune, amounting to $3,000,000 or more, to the University of Wisconsin. Colonel Vilas was for seventeen years a professor of law and for eleven years a regent of the university. That he had a thorough understanding of its capabilities and deficiencies is shown by his will. This has been published by the university in a memorial pamphlet, and is of great interest, both from a legal and an educational standpoint.

After the death of his wife and daughter the estate passes into the hands of trustees, who are to allow half the income to accumulate until the capital reaches $20,000,000, and then

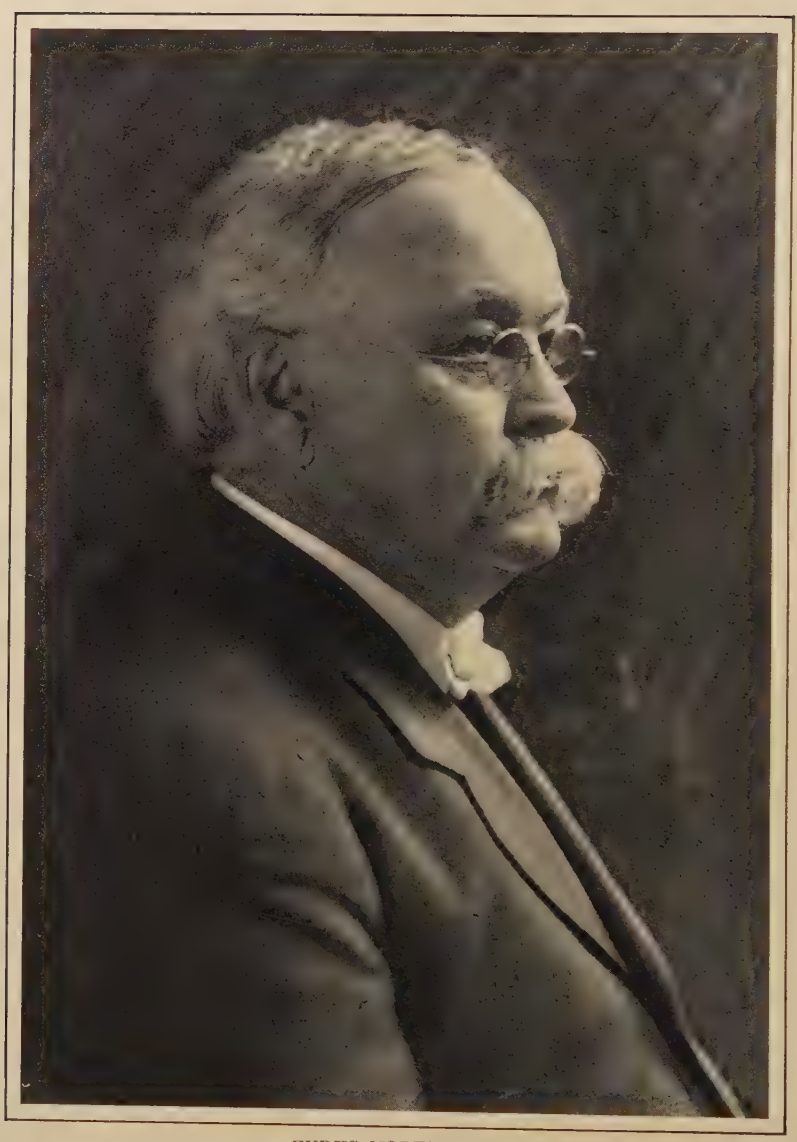
a quarter of the income until it reaches $30,000,000. The surplus is to be spent for the university according to provisions which are very definite and yet ingeniously elastic. In brief, the university will ultimately have, first, a large and handsome theater, suitable for assemblies and musical and dramatic entertainments. Then there will be sixty undergraduate scholarships of $400 a year and sixty fellowships of $600 or more. Part of these fellowships are for travel and foreign study; part of them are for art and music.

At least one fifth of these scholarships and fellowships are to be given to students of negro blood if worthy and qualified candidates present themselves. This is an amusing instance of our conflicting State legislation; what Kentucky prohibits Wisconsin compels, that is, coeducation of the races. Musical festivals are to be held and prizes offered for the encouragement of musical talent and appreciation. Finally, there are to be ten or more research professorships established. The incumbent is to receive a salary between $5,000 and $10,000, and may retire after fifteen years on a pension. The professor shall never be required to give instruction for more than three hours a week, and he shall be provided with whatever he needs for his investigations; assistants, clerks, mechanicians, collectors, books, specimens, apparatus, traveling expenses, etc. In short, if a college professor were to describe his ideal of Heaven, it would be very much like a Vilas professorship, but, like Heaven, it is in the indefinite future, and it will be hard to attain.

ENROLLMENT OF STUDENTS BY COLLEGES AND SCHOOLS IN THE UNIVERSITY OF WISCONSIN, 1888–1909.[1]

Year	Letters and Science	Engineering	Medical	Agriculture	Law	Pharmacy	Music	Summer School Session	Twice Counted	Total
1888–89	419	89	—	46	119	49	—	—	—	722
1889–90	497	113	—	32	112	35	—	104	—	893
1890–91	558	137	—	97	118	56	—	131	—	1097
1891–92	599	152	—	152	126	63	—	145	—	1237
1892–93	711	179	—	175	166	65	—	189	(9)	1476
1893–94	702	201	—	173	169	42	—	—	(8)	1279
1894–95	785	225	—	213	266	41	—	151	(10)	1671
1895–96	818	207	—	190	223	50	181	114	(71)	1712
1896–97	872	218	—	215	216	64	145	152	(80)	1802
1897–98	947	227	—	277	182	61	141	133	(68)	1900
1898–99	995	242	—	326	214	55	155	221	(64)	2144
1899–00	1096	327	—	381	231	51	199	341	(204)	2422
1900–01	1137	411	—	440	266	44	191	323	(193)	2619
1901–02	1176	513	—	448	260	35	169	367	(191)	2777
1902–03	1232	585	—	461	226	35	126	410	(205)	2870
1903–04	1325	744	—	525	201	36	131	400	(239)	3123
1904–05	1476	804	—	526	183	33	153	403	(236)	3342
1905–06	1579	768	—	628	154	32	209	528	(327)	3571
1906–07	1579	799	—	622	165	37	191	568	(302)	3659
1907–08	1762	921	25	694	157	32	150	661	(389)	4013
1908–09	1865	896	32	859	165	44	114	1026	(480)	4521
1909–10	2150	781	49	964	159	42	143	1128	(476)	4947

[1] Graduate students are included in the enrollment of the several departments. In 1909–1910 they numbered 281; 224 in Letters and Science, 33 in Engineering, and 24 in Agriculture.



CYRUS NORTHROP,
President of the University of Minnesota.

CHAPTER VIII

UNIVERSITY OF MINNESOTA

THIS is the great seal of the University of Minnesota. The field is quartered and equal space assigned to the lamp representing the humanities, the telescope representing pure science, the plow representing applied science, and the palette and brushes representing the fine arts. But heraldry is as fallacious a guide to character as palmistry, and, if the arms of the University of Minnesota are to convey a correct impression of the institution as it now is, they should be changed to the following design: The plow very large, the telescope small, the lamp still smaller, and the palette altogether absent.





This unsymmetrical development, characteristic to some extent of the State universities generally, should not be too hastily condemned. It is rather creditable and encouraging than otherwise, because it indicates that the universities that have gone West have grown up with the country, devoting themselves rightly, though too exclusively, to the primary and immediate needs of the locality. The fact that the State universities have their roots deep in the soil is the best assurance that they will maintain a stable growth and in due time blossom in art and be fruitful in new knowledge.

The question arises whether that time is not now due, whether the State universities are not now big enough and rich enough and old enough to demonstrate their ability

to cultivate the more recondite and less obviously useful branches as successfully as do endowed institutions. This is fundamentally a question whether art, literature, and science in their highest forms can thrive under a democratic *régime* or must have patronistic support. In undergraduate instruction the State universities have proved their competency. In creative work their capability is still disputable.

The realization that the State university is now on trial and must demonstrate its equality with other institutions in this respect or cease to claim it, has led, in the last few years, to a determined effort on the part of many of them to secure recognition and support for research as an essential function of the university. This effort has resulted in the organization of graduate schools, the foundation of research fellowships, and in a few cases professorships, the publication of periodicals and series of monographs, the enlargement of libraries, and the appropriation of money openly and specifically for research. Such investigation as had been previously carried on in Western universities had been due to the initiative and energy of individuals, for which the university authorities deserved little credit, and indeed were not inclined to claim any. The regents generally regarded scientific research as a private fad of a professor, like collecting etchings or playing the piano, and they rarely interfered with it so long as he delivered full tale of teaching and administration and did not ask for money. The signal exception to this attitude has been agriculture, where the money came from the Federal instead of State government. The experiment station funds were given explicitly for research and the influence of the United States Department of Agriculture, exerted through the Office of Experiment Stations, has been to check the tendency to spend the money on teaching, demonstration, and trivial experimentation, and to encourage the station men to attack difficult and fundamental problems of biology

and chemistry, even though the practical results were remote and doubtful. And now original research along agricultural lines is further endowed by the Adams Act of 1906, which appropriates $30,000 a year to each State specifically for that purpose. It happens that new methods of experimentation have been recently developed that open out attractive and hitherto impenetrable fields of investigation, such as heredity and physiological chemistry, whose scientific value, in my opinion, is not lessened by the fact that they have a most important bearing upon human life and industries. I said "it happens" but there is nothing accidental about it. It always happens so when a determined and persistent attack is made on any of Nature's fastnesses.

The impulse for research in the collegiate departments in the State universities came from two directions, by convection from the Eastern institutions, primarily Johns Hopkins, and by conduction from the agricultural experiment station where this formed a part of the university. In Minnesota comparatively little has been done in research except in the agricultural department until recently. The graduate school was first definitely organized in 1905, and then the regents permitted it only on condition that it was not to cost anything.

The apparent backwardness of Minnesota in this, as in some other respects, is easily understood when we consider its youth and rapid growth. More than half its alumni have been graduated in the last five years. Every building on the campus has been erected since President Northrop took control twenty-five years ago.

The character of State universities may in fact be told pretty closely by their age, for in their life history they are much alike. This may be diagrammatically expressed as follows: First a college or academy of the Eastern type is transplanted to Western wilds, usually under denominational auspices; it struggles for existence in the unfriendly environment; the State adopts it; it receives extensive

but unproductive endowments in land, and these are mostly sacrificed in the effort to keep up expenses; the State comes to the rescue with small but regular appropriations; an agricultural college is established by the Morrill Act of 1862, either as an ally or a rival of the State university; the university in the late eighties begins spontaneously to grow in geometrical progression; professional schools, especially engineering, develop; the connection with the State becomes closer; the institution takes on new functions, receives unprecedentedly liberal appropriations, and becomes conscious that it is a real university, with all the honors and responsibilities that come with maturity. Into this outline sketch might be painted the portrait of almost any of the State universities of the West.

As Professor Guido Marx has shown,[1] the curves representing the number of students are astonishingly similar in the case of American institutions of higher education, whatever their character and location. There is a normal increase in attendance corresponding to the growth in population until about 1885, when the curve takes a sudden leap upward, and in the case of the State universities assumes a parabolic form. The curve for German universities shows the same peculiarity, with the sudden upward bend occurring at 1871. This is easily referable to the consolidation of the empire, but in the United States there was no such political revolution in 1885, and I have not found any one who could explain satisfactorily why a boom in higher education should have struck the country at that particular time. Where I have asked in different universities why the attendance increased suddenly along in the latter half of the eighties, I have been referred to some change in the local conditions. "Oh, that was when we got a new president," or "That was the year of the big corn crop," or "The new school law came into effect then," or "The Legislature

[1] *Science*, May 14, 1909.

was unusually generous." But there is only two or three years' difference between Harvard and California in the date when the curve starts upward, and it is obvious that when Eastern and Western institutions, private and public, high schools and universities, classical colleges and technological schools, are affected almost simultaneously in the same way, the fundamental cause must be a general, not a local one.

There is, however, a marked difference between the Eastern endowed and the Western State universities. The growth which started in both classes of institutions about the same time has been in most cases slackened or checked in the former, while in the latter it has been continuously accelerated, and its limit is not yet in sight. There is a period in the life of a boy when his development seems purely physical. For a few years he does nothing but grow. This period, called by paidologists "the adolescent plateau," has its counterpart in the life of a State university, and in comparing them with the more mature Eastern institutions this must be borne in mind. The character of a State university depends primarily on its stage of maturity, not on its size, and this, as I said, can be told approximately by its age. The four large universities of the Middle West seem to many people very much alike; in fact, hardly to be distinguished, but they are readily classified by their date of foundation:—

University of Michigan	1837
University of Wisconsin	1848
University of Illinois	1867
University of Minnesota	1868

The oldest of these, the University of Michigan, is growing as fast as the others, but has assumed a more mature and defined character. I do not mean to say that it has reached the limit of its powers and settled down to a quiet and peaceful old age. On the contrary I ascribe its comparative in activity in recent years to the accidental dominance of the

genru or Elder Statesman, and I believe that it will develop greatly in the near future. The University of Wisconsin, younger than Michigan and smallest of the four, has in some respects outstripped the rest, and has certainly passed through its period of immaturity. The universities of Illinois and Minnesota being practically of the same age are more alike than the rest, for they are in about the same stage of evolution. They are, in fact, just emerging from the adolescent plateau, and actually remind the visitor of a lusty and overgrown youth whose clothes are too small for him, who has not full control over his voice and limbs, and who has not quite decided whether to be a preacher or a pirate or a locomotive engineer.

But dropping such fanciful impressions and getting down to plain figures, the University of Minnesota is third in size of the universities of the United States. The registration in the fall of 1908 was as follows, leaving out the summer students as of uncertain status: —

Michigan	4637
Columbia	4540
Minnesota	4355
Harvard	4336

If we take academic students alone, Minnesota is still third, with Harvard and Michigan above it. In the last twenty years the attendance at the University of Minnesota has increased more than twelve times as fast as the population of the State. Its law, medical, and agricultural schools have gained more students in the last six years than any other of the fourteen universities here considered.

In considering enrollment statistics we must take them for just what they mean, no more, no less. A university of 4000 is influencing directly twice as many persons as one of 2000. It has probably double the chance of catching a great genius. But the units compared in registration figures

are not at all of the same value. We are counting heads without regard to what they contain. A student in the Agricultural School of the University of Minnesota is a very different sort of an individual and is doing a very different kind of work from a graduate student at Johns Hopkins, who may have had ten years more schooling. In fact Johns Hopkins spends on the average five times as much a year on the instruction of a student as Minnesota does.[1] The expenditure per student for instruction is less in Minnesota than in any other of the fourteen universities, owing to the fact that the classes are large, the faculty are overworked and underpaid, and there is comparatively little graduate work done.

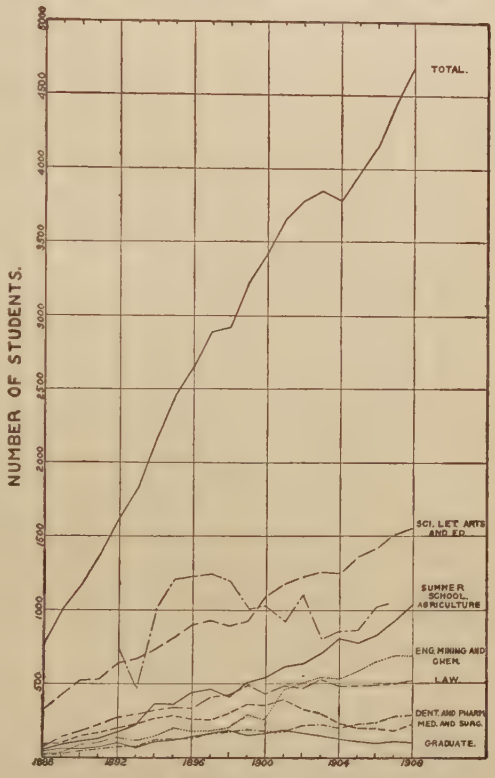
In comparing the number of students of the different universities, those in the School (not the College) of Agriculture at Minnesota should properly be excluded, for they are barely of high-school grade. Subtracting the number of students in the School, about 755, the University of Minnesota ranks seventh instead of third in total attendance. The School of Agriculture is under the circumstances a perfectly legitimate branch of the work of the university, and one of its most original and interesting features, but in statistical comparisons it is necessary to leave it out. A similar deduction though a very much smaller one has to be made in the case of Wisconsin.

The University of Minnesota, as we have seen, has become in a remarkably short time one of the greatest universities in the United States, and circumstances seem to favor its continued and increased prosperity. In the first place, its location gives it exceptional opportunities. In considering the relative growths of American universities in recent years it is apparent that a State university has an advan-

[1] The figures are $324 and $66 respectively, obtained by dividing the sum of the salaries of the instructional staff by the total number of students. See Bulletin 2, Carnegie Foundation, and the preface to this volume.

tage over an endowed university and a university in a large city an advantage over one in the country. The University of Minnesota as the only State university in a large city, with the possible exception of California, combines these advantages. The cities of Minneapolis and St. Paul, with a total population now of about 550,000, will in themselves support a large university. Location at a State capital is also a great advantage to a university. The campus of the university is not quite so neighborly to the State House as is the case at Madison, but it is close enough so the legislators and other officials can become personally acquainted with the work of the institution and may in the future receive the aid of the faculty in administrative affairs as is done in Wisconsin. The university has a clear field inside the State and a good chance outside. It is not, like Ohio State University, encompassed by a host of other colleges. It has not as in Michigan been separated from its colleges of agriculture and mining. To the westward it has no competitors of its size and standing until the Pacific coast is reached. Of course eventually the Missouri Valley and the Rocky Mountain States will develop their own universities of similar character, but in the meantime the University of Minnesota could draw largely from the western half of the United States for advanced work. As a mere matter of financial policy it would pay Minnesota to bring its graduate and professional schools quickly into the front rank because students from other States contribute to the revenues of the university as well as add to its reputation. That the university will receive adequate support seems to be assured, for Minnesota will be one of the richest and most populous States, and the last two Legislatures have shown a disposition to recognize the growing needs of the institution. Including all its sources of income, State tax and special appropriations, Federal funds, student fees, endowment, etc., the University of Minnesota will have for

spending during the coming biennium about $3,700,000. The university has been more fortunate than other State universities in retaining a larger portion of its early land grants. These contain extensive iron ore deposits, and according to the estimate of the State Auditor they will eventually be worth $30,000,000 or $40,000,000.



THE NUMBER OF STUDENTS IN THE UNIVERSITY OF MINNESOTA, 1888–1908.

Times have changed since President Northrop became the head of the university a quarter-century ago. Then the Regents thought themselves fortunate to have a building appropriation of $30,000 a year for six years, and the president of the Board said that he thought Minnesota would be greatly displeased if the university did not with that sum build all the buildings it would ever need. There were then two buildings, both since destroyed by fire. Now there are twenty-three buildings on the campus, as many more belonging to the agricultural college, and the recent Legislature authorized the erection of ten new buildings. At the first commencement of his administration President Northrop handed out nineteen diplomas; last commencement

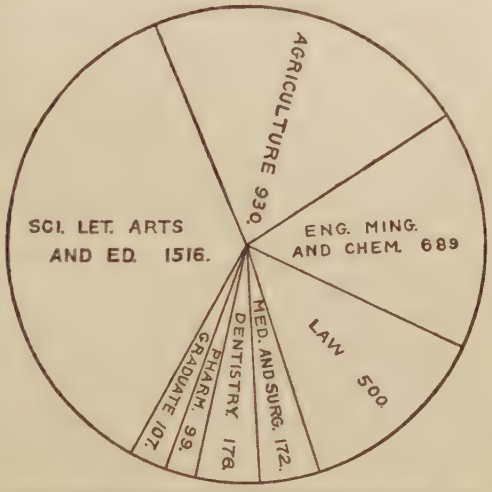
there were 550. Practically all of the 6300 living alumni have, therefore, been educated by him. "Educated by him" is here to be understood with some literalness, for President Northrop is known and loved by a large proportion of the students, which is more than can be said of every president of a great university nowadays. In his address at the Yale bicentennial he said: "I would rather have the glory which rests upon the memory of Dr. Arnold, of Rugby, than the halo which encircles the proudest don of Oxford." This glory he has attained, and it may well be considered the equivalent of the glory of making a scientific discovery, of writing a great book, of being the ambassador of the nation, or revolutionizing an educational system. Sometimes one can get a glimpse of a president as seen through students' eyes from the college publications. I quote one stanza from a poem in the *Gopher* of 1901, which is rather different in tone from what usually appears in class annuals: —

"When Prexy prays,
Our heads all bow,
A sense of peace
Smoothes every brow,
Our hearts deep stirred
No whispers raise,
At chapel time
When Prexy prays."

Somewhat the same sentiment is expressed in the following lines from the *Alumni Weekly* of this year: —

"In Prexy's face
Are many stories — some of them are glad,
Told in a smile for youthful joy and mirth;
And some of them are tender, having birth
In tears of sympathy when hearts are sad.
Power, strength, and comfort, all are there,
And even a dim soft shadow, sorrow's trace.
With these the hand of Time has set Love's seal
In Prexy's face."

President Eliot retires from office but little in advance of President Northrop, at the same age, seventy-five, and the two universities are not far from the same size, yet the mode and character of the influence exerted by the two men and the way they are regarded by their students and faculty form an interesting contrast. The contrast is, however, scarcely greater than between President Northrop and his own university. It is curious to see how an immense Western State university has grown up under a man of the type of the New England college president. I fancy he must at times have looked upon it as an ugly duckling when it showed a disposition to develop characteristics very different from dear old Yale. But while he has stood stanchly for his own ideals of education and culture, he has retained a remarkable degree of openmindedness, and met new conditions and demands with a certain good-humored tolerance that has gone far to keep the institution free from the growing pains incident to such rapid development. His attitude toward innovations is best expressed in his own words by a quotation from his last annual report, where, in speaking of the addition of accounting and insurance to the curriculum, he says: —



THE DISTRIBUTION OF STUDENTS IN THE UNIVERSITY OF MINNESOTA, 1908.

"This is only one of the many subjects that are continually appealing for special recognition either by the establishment of

new chairs or the introduction of new specialists to deal with new courses. Practically there is no end to the possible demands of this kind. But there is a limit to the University's ability to establish and maintain new chairs — and it is not wise to search very much for opportunities to expand. It is wise for all departments to do the best work they can and in the most thorough way with the forces at their command. Such new subjects as may present themselves as desirable additions to the curriculum the Regents will entertain as hospitably always as the funds of the university will permit."

The president is no doubt wise in resisting the easily besetting sin of Western universities, the disposition to multiply courses, departments, and schools, regardless of needs and means, the tendency to expand like a bubble, merely superficially. But this attitude of waiting for something to turn up and force itself in is very different from that of rival institutions, like Wisconsin and Illinois, which are hustling to find new ways of making themselves useful, like an office boy who has just got a job.

Like a manufacturer who has built up a big business by his own exertions, President Northrop does his office work in his head. He has a distaste for red tape of all kinds, especially the elaborate circulatory system of reports, memoranda, and acknowledgments, which is the pride of the modern expert in administration. The burning questions of vertical *versus* horizontal filing, of wet copying *versus* dry copying, and the claims of rival card indexes, do not interest him, for he has no use for any of them. A half interest in a leisurely typewriter suffices for his formal correspondence. and he much prefers a face to face and heart to heart talk with a professor or student to using a telephone or any other kind of intermediary mechanism. There are no halberdiers or grooms of the antechamber to protect his dignity or time. It is not necessary to negotiate an interview in advance; you cannot even send in your card, because there is nobody to take it. You turn



University of Minnesota.

FOLWELL HALL.

The main collegiate building.



University of Minnesota.

STUDENTS IN THE DAIRY SCHOOL GETTING CULTURES.

to the right after you pass through the Doric porch of the library building; the office door is open and he will be glad to see you. But you cannot stay after 10:30 A.M., for he has an imperative engagement at that hour. Then he locks his office door and goes down the corridor to the little side entrance to the platform of the chapel, where a dozen of the faculty and one or two hundred students are assembled. This is, I believe, the only one of the larger State universities where daily chapel exercises are held. The attendance is voluntary, and that it keeps up as well as it does is due chiefly to President Northrop's practical, earnest, and humorous talks on life in the university — and out of it. For it must not be inferred from what I have said that the president does not know what is going on in his big, complicated institution, and have a hand in it all. What puzzles me is how he runs things without any of the usual administrative machinery. His successor will not be able to. This year marks the end of the patriarchal *régime* in the university. The new president will be of necessity more of a constitutional sovereign and bureaucrat.

The reason why the State universities seem so alike is because undergraduate instruction is much the same everywhere, and the Western States were alike at first in population, conditions, and educational needs. But as the universities add higher departments of research and technology and come into closer touch with the life of their people, they will differentiate as the States are differentiating. In pioneer days every town believed itself destined to become "the railroad center of the West," and did not hesitate to say so, and every county claimed to raise everything from sugar cane to winter wheat. But the days when aspiration radiated equally in all directions have passed. If a county can boast of a soil which has a national reputation for some one crop, say muskmelons or sugar beets, and can besides raise enough garden truck to supply the local needs, it is

tolerably well satisfied with itself nowadays. We may hope for a similar specialization and limitation of ambitions in Western institutions of higher education, State and independent. Colleges used to be employed like railroads and court houses to boom towns. I can remember when a town was regarded as having made a promising and creditable showing if at the end of its fifteenth year it could boast of 25,000 inhabitants, two daily papers, three universities, four banks, and thirteen churches. The tourist of to-day will sometimes see from his car window a pretentious-looking building standing by itself on the prairie miles away from town or city, and if he inquires of a local passenger, he may be told that it was the Continental University, established to raise the price of lots in Snooks's Addition. There is a story told — but this was before my day — of a Chairman of the Committee on Education, who reported to his presbytery, conference, or association, the name may be varied at pleasure, that the year had been a prosperous one for his department, for "We have established three universities and have the logs ready for a fourth." That would have been all right if a Mark Hopkins and a student could have been found for every log, but the supply of both was too limited to permit the survival of all the colleges so optimistically started. Still we have no reason to regret the educational lavishness of our forefathers. Many seeds have to be sown to get a single stalk, and there is only one way to tell the stony from the fertile ground. The chief harm was the temporary degradation of the word "university," but this was soon rehabilitated, and Eastern colleges, which used to disdain the name, were glad to adopt it. The struggle for existence has been severe and full of hardship for individuals, but beneficial to the community, for the strife for students has brought into the college circle a larger proportion of the population than used to be thought possible. Some of these hastily planted institutions have

become State universities; some rival the State universities in size and standing; others are finding their places as colleges or academies. The weeding-out process is just now very active under the influence of the General Education Board, which, having at its command about $53,000,000 to give away, is able to enforce its judgment as to which colleges are fittest to survive. It is popularly believed that the secretary of the Board sets his compasses by the hundred mile mark on the map of a State and then covers it with tangential circles, and the college that is nearest the center of a circle gets the money. This has a beneficial effect in two ways: it insures a more even covering of the territory, and it causes the colleges to decide upon their proper function and to seek out their true sphere of influence. Their relation to the large universities is also rapidly being defined.

The differentiation of the State universities will not be forced by such outside influences, nor by competition with one another, for this practically affects only the higher departments. But the newer States begin to show peculiar characteristics as the population and industries become more settled, and these characteristics will appear in their universities. If there is anything at all in either of the once dominant theories, that the history of a people is determined by its climate or by its race, the State universities will bring forth different kinds of scientists, authors, and artists. For example, the University of Minnesota is as strongly Scandinavian as the University of Wisconsin is German. A stranger could tell which campus he was on by the easy and pleasant method of sitting on the fence at the noon hour and watching the girls go by. In Minneapolis he would see many who could play the rôle of the Viking's daughter without any making up. In Madison he would be struck by the number of Germans, not the dumpy rosy kind, but the tall, long-faced brunette type. For lack of

an adequate anthropological vocabulary I fear I do not make myself clear on this point, but I suggest some of the enterprising young sociologists in these universities take the question as a thesis subject. In the foreign-born population of Wisconsin the Germans outnumber the Scandinavians two to one; in Minnesota this ratio is exactly reversed.

Scandinavians claim to have produced more great men in proportion to the population than any other race except the Greeks. Their percentage of illiteracy is the lowest of any in Europe. In the Western schools in general the Scandinavian students, like the Jews in the East, have the enviable reputation for getting to the top of the class and carrying off any medals, prizes, and scholarships that may be available. We have, therefore, a right to expect that the University of Minnesota, which has now almost as many students of Scandinavian descent as the University of Upsala, will contribute more than its quota of names to future American biographical dictionaries.

The larger State universities have reached a point where they should consciously decide in what lines they will specialize, and in coming to such a decision they should take into consideration their racial constituency as well as their situation. The University of Wisconsin or of Illinois should become the center of Germanic culture in the United States and the University of Minnesota of Scandinavian.

The universities seem hardly awake to the importance of utilizing their natural advantages in this respect, although some slight tendency toward such specialization can already be detected. The University of Minnesota has two professors of Scandinavian literature offering twelve courses, and there is catalogued a course in Swedish philosophy, but these are not very popular, and some of those who elect them are led more by the love of ease than love of culture. The same advantage is taken of modern languages every-

where, for a student of foreign parentage can get credit on the books of the high school or college for the mastery of a language which he knew in advance better than his classmates of American parentage can ever know it. But the proportion of "snap hunters" is not large in Minnesota, and most of those who can read Ibsen in the original prefer to stumble through Molière. It somehow seems to them more American to study French or Latin literature than Norwegian or Swedish.

The desire of our immigrants for quick Americanization is, of course, commendable, and it would be unfortunate for the country if it were otherwise, but they should not in their haste cut themselves loose so completely from the mother country. German philosophy, German science, and German literature have in the last half century profoundly influenced American thought, but the influence has not come to any great extent through the German immigrants. They have sworn off allegiance to Kaiser and Kant together. Some of them, it is true, had never heard of Kant, but they had nevertheless been under his sway quite as much as under the Kaiser's. The reason why the United States is not being enriched by a transfusion of European culture at the same time that it is being enriched by a transfusion of European blood is not so much because the immigrants are from the uncultured classes as because they shut off the channel of communication with the higher life of the countries they have left. The children disown their mother's tongue. They sacrifice their bilingual birthright in order to adopt the American insularity of their schoolmates. They are sometimes even ashamed of their European heritage. If you call a Minnesota youth a Swede, he is apt to resent it as an insult, particularly if he happens to be a Norwegian. The universities should do something to cultivate a proper race pride which would not in the least interfere with a true Americanism. The members of the

Huguenot Society, of the Holland Society, and of the Society of Mayflower Descendants may be undemocratic, but they are not unpatriotic. And steerage on the *Mauretania* is preferable to first-class on the *Mayflower*.

In the University of Wisconsin there are some evidences of Teutonic influence, although the most conspicuous is the abundance of beer. At the University of Minnesota there is a Scandinavian Society, and this spring a Norwegian play — Holberg's "Den Stundeslöse" — was presented by the students. Why should not Minnesota follow Columbia in establishing an exchange of professors with Scandinavian universities? If I may be permitted a suggestion, I would advise the Minnesota Regents to send to Stockholm for Svante Arrhenius, give him any salary he demands, and make him Professor of Cosmogony. This would be a good investment, for it would in itself be sufficient to place the institution among the great universities of the world, and I do not know of any cheaper or quicker way of doing it. The university would naturally prefer to grow its own great men, but this will take time. I saw on the campus more than one stocky, yellow-haired, and big-headed young fellow, looking as much like Arrhenius as his younger brother, but they are not likely to go in for cosmical physics.

The University of Minnesota needs "head liners." I have no reason to think that its instructional staff as a whole is inferior to those of other universities, but it has few men of great prominence. I think it is safe to say that the average well-informed person would be able to give the names of more professors of any other of the fourteen universities than of Minnesota. Its faculty does not become conspicuous through making sensational discoveries or bad breaks. Consequently the university does not get advertised and is, in fact, less known to the public than many smaller, poorer, and less important institutions. President Northrop is opposed to university advertising, both the kind

that is paid for and the kind that is otherwise obtained. He holds that true scholarship is modest and avoids publicity. This is a commendable ideal.

It is unusual to find statuary on the campus of a State university. In fact, I can recall none elsewhere except the football player which stands at the entrance of the University of California. But the University of Minnesota is exceptional in possessing two bronze statues of heroic size and artistic merit. One of the "student-soldier," by Theo. Alice Ruggles-Kitson, commemorates the 218 university men who served their country in the war with Spain. The other is a statue by Daniel C. French, of Governor J. S. Pillsbury. His name is a household word the country over in connection with "Pillsbury's Best," but on the campus he is known as "the Father of the University." Never was title more deserved. He was a regent from 1863 to the day of his death in 1901, part of that time *ex officio* as Governor, and the rest of the time by appointment. He was President Northrop's chief adviser and supporter in the development of the university, and more than once saved it from disaster. In 1864 when it was supposed to be bankrupt, he took charge of its affairs and cleared it of debt, and yet saved a large part of its lands, now proving to be of immense value. In 1887, when the Legislature was determined to take away the agricultural college, he put a stop to the movement by offering to give a science hall costing $130,000 if the institution was kept intact.

By this timely action Minnesota was saved from the dividing of educational forces and duplication of work, which has been so unfortunate in the case of Michigan, Kansas, Colorado, Oklahoma, and other States. Nor has the agricultural college been stunted by the overshadowing of the university. On the contrary, it is, as I have implied, one of its most vigorous and progressive departments, and has set the pace to other State agricultural colleges in

methods of research and of education. Here was begun early the breeding of seed for greater yields, and it is estimated that Minnesota gains $2,000,000 a year through the use of the pedigreed varieties of corn, wheat, oats, barley, and flax developed in this experiment station. The Colonial Dames are not half so firm in the faith that "blood will tell" as are the young men whom you find sorting the seed at the agricultural college. Pick out a kernel of wheat from one of the thousands of envelopes here shelved, and they will refer to the herd book, or whatever they call it, and give you its ancestry for ten generations back, telling you how many kernels each stalk produced each year and their weight.

But to double the yield on the farms of the State, as the college is hoping to do, the intelligence of the average farmer must be quadrupled; accordingly, the Minnesota authorities are working out a system of industrial education for the whole State on an unprecedented scale. The aim is to have a well-equipped agricultural high school within reach of every farmer boy and girl in Minnesota, either by establishing independent schools or subsidizing the existing high schools which add the necessary branches. The latter is certainly preferable, for it is as bad policy to divide the high schools on class lines as to divide the university. Two model agricultural high schools, under the control of the university, have been established at St. Anthony Park and at Crookston. These schools educate for the farm, not away from it. They are completely coeducational except for occupational segregation, the boys taking carpentry, blacksmithing, stock judging, and military drill, while the girls are taking cooking, dressmaking, home management, and etiquette. It is interesting to see how much more attention is paid to the esthetic side of life in the industrial schools here and elsewhere than in the department which monopolizes the name of "College of Arts." Music, literary

society work, nature study, and art in various forms of handicraft, are required of all. On the other hand, a man could get a "liberal college education" without having ever attempted to sing a song, make a speech, or draw a design. The agricultural school is the only part of the university having dormitories. The total expenses of a student in the school are officially estimated at less than $85 a year, not counting the cadet uniform. The agricultural school and college occupy an extensive and ultimately an extremely valuable piece of land midway between the Twin Cities at St. Anthony Park. It is two miles away from the main campus and is practically an independent institution, being under a stricter *régime* and having a social life of its own.

The main part of the university is located on a high bluff around which winds the Mississippi. Looking across the Mississippi, we see the skyscrapers of the business center of Minneapolis, and in the river at our feet the Falls of St. Anthony, to which the city owes its prosperity. These falls abandoned all pretensions to beauty long ago when they went into the mill business, but four miles down the river the Minnehaha Falls are protected by a surrounding park and so retain their pristine charm. They are at least as near to nature as Longfellow's Indians. Minnehaha being one of the few spots in America about which legend and poetry have grown, and having but little water in it anyway, is not likely to be interfered with by the demands of manufacture, but the fall in the Mississippi is another matter. Father Hennepin's discovery of 1680 has proved more valuable than a gold mine, and in the rapidly approaching future, when our industries will be dependent on liquid coal, it will be a still greater source of wealth. If the plans now being made for its more complete utilization are carried through, the shops of the university and the factories of the Twin Cities will receive cheap and abundant power from the Mississippi.

The university has so far not realized the scenic possibilities of its site. The buildings turn their backs on the river, whereas if they were properly grouped, they could produce an effect like the new buildings of the College of the City of New York, as seen from St. Nicholas Park. The campus is smoked by two railroads that cross it and threatened by the stench of a packing-house established near by. The extension of the campus, for which the last Legislature appropriated $350,000, will give the university still more river frontage, but the new plans for the architectural development of the university, as published in the *Alumni Weekly*, make no better use of the natural advantages of the location than is done on the old campus. The new buildings do not conform to the curve of the bluff and river, but to the railroad track, which is likely to be removed. They are to be stiffly set in squares, like city blocks, although such an arrangement in this case is neither necessary, convenient, nor pleasing. It is to be hoped that these plans will be reconsidered before the university is committed to the investment of a million dollars in buildings. Unless it is, the new campus will be inferior to the old, which presents quite an attractive appearance, in spite of or because of the fact that it was not planned at all, but grew up at haphazard. In architectural style the buildings range from Phidias to Richardson. None of them, as I have said, is over twenty-five years old. This is due to the custom of burning down a building whenever the president goes away; at least I was so informed when I inquired about the traditions of the university. If that is the case, I suggest that the president be not allowed to leave the city, for if he does, the chemical laboratory is likely to go,[1] as this building is wooden, although it has a heavy stone exterior, so heavy, in fact, that the keystones in the window arches have to be propped

[1] I was mistaken about this. It was not the chemistry building but another one, the pharmacy, I believe, that was the next to burn.

in place. The newest building, Folwell Hall, so named after the first president, is of much more substantial construction, and indeed is one of the most convenient and handsomely finished recitation halls I have ever been in. The library building, on the other hand, is very awkwardly planned.

The prettiest building on the campus is appropriately the woman's building, Alice Shevlin Hall, of red brick trimmed with terra cotta. It was put up by a gift of $60,000 from Thomas Shevlin, and it has been furnished through the efforts of the Y. W. C. A. and the Woman's League, in excellent taste, so as to give the impression of both comfort and freedom, while avoiding altogether the institutional air. The big living room, two stories high, with a fireplace at one end, is very attractive, perhaps because one of the rules adopted by the Self-government Association prohibits all studying in it. There is a cafetaria which furnishes lunches at ten or fifteen cents and turns in a surplus to the hall at that. Universities running their dining halls at a loss of several thousand dollars a year please take notice. But the most useful feature of the building is a large, bare, quiet, darkened room with no books, no pictures, and no furniture except fifteen couches, whereon the young women may relax *à la Delsarte* in a vacant hour. I imagine that this will prevent a good many failures in school work and a good many failures in home work afterward.

All the four State universities of this group, Michigan, Wisconsin, Illinois, and Minnesota, have now provided club-houses of this kind for the women students, and the men in these universities are earnestly striving to follow suit. Plans for the Minnesota Union have already reached the blue-print stage and are likely in a few years to get into brick and stone. A dormitory for the women was authorized by the last Legislature. No such accommodation seems to be in prospect for the men. Except for those who gain

admittance into fraternities the students live at home or board around town. About 39 per cent of the students come from the Twin Cities, and they disperse over an area of ten miles' radius when their classes are over, leaving the campus in the evenings deserted as a business district on Sunday. They retain their own family, church, and social affiliations and look upon the university as merely a continuation of the high school. I am not sure that this is a bad thing for them. Our universities have not been so successful in handling young people in bulk that they can claim any decided superiority over the home. But it interferes, of course, with the development of a sentiment of solidarity, and it throws the burden of campus life and activities largely upon the country students who room in the immediate vicinity. Here as elsewhere the fraternity men, although above the average in talents, training, and means, fall below the average in scholarship and take little part in voluntary literary work. In the last twelve years but one fraternity man has represented the University of Minnesota in an intercollegiate oratorical contest, and but five in intercollegiate debate, although twenty-one such honors have been awarded in the former and eighty-one in the latter. There are forty-six fraternities and sororities in the university, and all the other organizations of every kind number only forty-nine.

Although it is to be classed as a city university, the standard of expenditure is very low compared with Eastern institutions. According to an investigation made recently by a Senior in economics, the average amount of money spent by the students from out of town is $427.45. The city students spent on the average $327.37. The most extravagant fellow in the university was a Senior who spent $884.50 in one year. The item of clothing ranges from $57.30 a year for out of town students who earn their own living, to $133.49 for the city student who does not support

himself. Over 64 per cent of the students earn something toward their support during the summer months, earning on the average $116.31.

Probably no other great university could show so large a proportion of self-supporting students, and Minnesota will not be able to keep it up very long. It is becoming more difficult everywhere for a young man to put himself through school, because the cost of living and education is rising, and the opportunities for employment are being naturally and artificially curtailed. Already in Minnesota the labor papers are attacking the university because the students work their way, even though they confine themselves to the unorganized occupations and such humble employment as waiting on table and tending furnace. If they succeed, as they probably will, in their effort to cut off students from all kinds of temporary and incidental employment, then it will be in vain that the State provides higher education free, for it will only be available to the well-to-do classes. Formerly a student who worked his way through college anywhere was regarded with approval, even herolized. Now he meets with condemnation on both sides: from his associates in his work because he is willing to do anything and do it cheap, and from his associates in his study because he lowers the tone of the college and does not contribute to its athletics and social display. "A man who waits on a table cannot make our fraternity" is heard in more than one university. Neither can he make a union, because he is primarily a student, so he gets shut out on both sides. I have known several poor boys who started out to earn their own way through college, believing it to be the most honest way, but who gave it up and borrowed money because of this double burden of disapproval. They told me, and they ought to know, that a man who spends freely and runs in debt is regarded more favorably and gets along better than one who works and economizes.

Legislation is reënforcing public opinion in this matter. A Chinese boy who tries to help himself by waiting on table gets deported for his crime. We will admit a Chinese student to this country if he is independently rich, but not if he is independently poor. The chief refuge of the college student in the old days used to be teaching summer school, but the profession of teaching in all branches is becoming so hedged about with restrictions as to be unavailable. A student is not even allowed to utilize the art in which the modern college trains most efficiently, — athletics. If he plays baseball during the summer for money, he is disgraced. Many of our colleges were started with the idea, which appears feasible from an *a priori* standpoint, that students should support themselves, at least in part, by labor for the college, such as putting up the buildings, working on a farm, etc., but as these institutions have grown in numbers and wealth this plan has been abandoned, in most cases completely, and to-day we are further from it than ever and heading in the opposite direction. If a student builds a brick wall nowadays to learn how, he is made to tear it down again. That is, even in so-called industrial schools he is not allowed to work, but compelled to play at working. It is no wonder that some of our most clear-sighted and self-respecting young men desert our colleges every year through sheer disgust. The artificiality of it makes them tired. It is idle to deplore the increasing predominance of the leisure class in our colleges when we are by force of law and public opinion compelling college students, as we have convicts, to become a leisure class. I see only two movements which might counteract the prevailing tendency to make higher education increasingly expensive and parasitic. One is the plan of the University of Cincinnati, by which engineering students work alternately two weeks in the classroom and two weeks in the shops. The other way is to bring higher education to

the people who are at work by some form of university extension.

The University of Minnesota has as yet done little for the vocational and cultural training of the people of the State at large, except, as before noted, in agriculture; but this year two other departments — those of economics and education — have also received special appropriations for extension work and are prepared for an energetic campaign of popular education. The department of economics has recently shown itself very much alive by its rapid proliferation of new courses, and has already manifested a tendency to sprout in the direction of commercial training. Being in a city and near the capital, there is a good opportunity for the development of night schools, as in the University of Pennsylvania, and for coöperation in the State administration, as in the University of Wisconsin. The College of Law has led the way by its four-year evening course, corresponding to the three-year day course, and about one third of the law students are taking advantage of this opportunity. The late Legislature unfortunately did not see fit to establish a legislative reference library, on the Wisconsin model, but this will come in time and gradually. It must be remembered that the legislators of Wisconsin did not establish anything of the kind, either. They merely hired a man named McCarthy, at a low salary, to keep their catalogue in order, and if he chose to create a new and much-needed department of administration instead of spending his life arranging cards according to the Dewey numbers in the upper left corner, why, that was none of their business. The government of Minnesota does not need more books particularly; it needs a McCarthy.

The work in education was started in 1885 by Professor Harry P. Judson, now president of the University of Chicago, and has become a full-fledged college, ambitious to have a building and a model school of its own. The admirable

public school system of Minnesota has developed from the first in close touch with the State university. The relationship is indicated by the fact that the summer session is managed by the State Superintendent of Public Instruction, and is not, strictly speaking, a part of the university, although it makes use of the buildings and instructional staff of the university, and for some of its courses university credit is given. It is now chiefly a teachers' training school, but its scope should be extended to include other professions.

For example, physicians would find it advantageous to come to the university every few years to learn new methods or to carry on researches of their own. The College of Medicine and Surgery of Minnesota stands higher, I believe, in comparison with other schools of its kind in the United States, than does the College of Law. It is favored by its situation. The universities of Illinois and Wisconsin are obliged to send their students away for their clinical work. The University of Minnesota has access to eleven hospitals, with a total of 1620 beds. The State Board of Health has a new and admirably constructed building on the campus, in which bacteriological, chemical, and pathological examinations are made on material sent in from all parts of the State. The Regents had the courage and good sense to attempt to put an end to the system of maintaining two distinct medical schools by providing two chairs of homeopathy in the regular College of Medicine and Surgery, covering the subjects of therapeutics and materia medica, and students taking these courses in preference to those of the rival school would receive the homeopathic degree. But the homeopathists appealed to the Legislature and obtained an appropriation of $50,000 for a new and independent building, although the College of Homeopathic Medicine and Surgery had nearly worked itself out; by 1909 it was reduced to two Seniors and one Junior, yet it occupied its fifty pages in the university catalogue and

listed a faculty of thirty-five. This action of the Legislature in virtually reversing the decision of the Regents creates a situation like that which at one time nearly ruined the University of Michigan on the same question. It is to be hoped that some arrangement can be made by which all the medical work can be kept together, in order to avoid such duplication of instruction and division of interests as now results from the agricultural college being so far away from the rest of the university.

Now that all physicians are less dogmatic and more eclectic, there is no sufficient reason for perpetuating the old feud. The science has fortunately made such advances that we can now look down on the battleground and calmly note its positions without quarreling over which was right, or, rather, which was least wrong. The important thing is the lesson that the formation of medical sects can be avoided in the future only by a disposition on the part of the established schools promptly to recognize and receive any new movement which arises outside the circle of orthodoxy and seems to have any good at all in it. For example, psychotherapy might be considered such a movement at the present time. Loaded down as it is now with charlatanism in practice and absurdity in its theory, yet it appears to have a certain vitality, that is to say, validity. But assuming that it turn out to be altogether chimerical, a Chair of Psychotherapy in a university is less dangerous to humanity than a College of Mental Magic somewhere outside. Merely as a prophylactic measure it might be well if our universities were inoculated with mild doses of every heresy that turns up — scientific, philosophical, or sociological. Then our graduates would be to some extent immunized and not so apt to fall victims to any craziness of the crowd that happened to be epidemic in the outer world.

I have referred to some of the ways in which the Univer-

sity of Minnesota is adapting itself to the peculiar needs of the State, but I must mention two more: One, the School of Chemistry, created by the energy and initiative of Professor Frankforter, and especially devoted to the applications of the science to Minnesota industries. The other is the School of Forestry, which has for its summer laboratory the Itasca State Park of 22,000 acres at the headwaters of the Mississippi.

The new buildings for the schools of applied science, such as chemistry, engineering, and medicine, are to be placed upon the recently acquired addition to the campus. This means that the new campus will be virtually a masculine domain, while the old campus, which means the old college, will be predominantly feminine. This, however, will be merely a geographical expression of the present condition, which results naturally from the freedom of election. An example of this differentiation of the sexes is the membership in the two honorary societies. In the University of Minnesota this year the Phi Beta Kappa, choosing students from the Senior class for their literary proficiency, elected thirteen women and four men. The Sigma Xi, basing its selection on the ability to carry on scientific research, elected thirty-one men and four women. In the College of Science, Literature, and the Arts, the college proper according to the old idea, the women outnumber the men two to one. In the higher classes and in the purely literary courses, the proportion of women is still greater and tends to increase. There are now over 1400 women in the University of Minnesota, a larger number than in any woman's college in the United States.

The tendency of the women to congregate in the College of Arts has been interpreted by some as indicating the superior taste and higher ideals of the sex. Personally I should question this, for, in spite of appearances, I doubt whether women as a rule have any more fondness for "pure

culture" than men have. It must be remembered, first, that the literary studies are vocational for women, as leading to the profession in which they are most welcomed, that is, teaching; and second, that very little has been done in the universities as yet to provide other forms of vocational training for them.

But the women, in spite of their disposition to swamp certain courses, are welcomed and well treated in the University of Minnesota. The spirit of equality is dominant throughout the institution. There are sixteen women on the instructional staff. Most of them fill minor positions, but one, Miss Maria L. Sanford, has been professor of rhetoric and elocution for twenty-nine years. She retired on a Carnegie pension in 1909, at the age of seventy-three, highly esteemed and beloved for her services to the State at large, as well as for her work in the university.

If any attempt were made at discrimination against the women, the men of the university would promptly come to their defense. An instance of their gallantry occurred while I was in Minneapolis. The president announced in chapel that the young women should not go with the young men on the special train to Chicago for the football game. The rule was obviously sensible, because it could not be expected that a thousand students, whether victorious or defeated, would maintain perfect decorum on the return trip; but it was resented, as every new restriction is in the West. The interesting point is that the boys were as indignant about it as the girls, and the student daily published protesting editorials. They were determined that the rooting should not lack its treble clef. Imagine the Harvard students going on a strike because President Eliot would not allow the Radcliffe girls to go with them when they went to New Haven to be beaten at football, or the Columbia boys insisting on taking Barnard in a body to Ithaca for an intercollegiate debate. The president calmed the incipi-

ent rebellion by his personal influence and a little diplomacy. But, however misdirected, it was an interesting example of Western chivalry, of the real chivalry which demands equal privileges for the weaker sex instead of trying to shut them out or crush them out of every possible opportunity in work or play.

STUDENTS ENROLLED IN THE UNIVERSITY OF MINNESOTA, 1888–1910.

Years	Science, Literature, and Arts	Engineering and Mechanic Arts	Agriculture (College)	Agriculture (School)	Law	Medicine and Surgery	Homeopathic Medicine and Surgery	Dentistry	Pharmacy	Mines	Chemistry	Education	Graduate School	Collegiate Summer Session	Totals (less duplicates)
1888–89	342	25	2	47	67	75	13	22	—	—	—	—	34	—	781
1889–90	434	33	3	78	134	87	8	28	—	—	—	—	48	—	1002
1890–91	519	74	5	104	176	134	15	36	—	—	—	—	45	—	1183
1891–92	537	108	3	115	229	143	21	50	—	—	—	—	57	—	1374
1892–93	631	152	7	144	270	173	24	61	—	—	—	—	81	—	1620
1893–94	679	145	7	203	285	199	17	43	25	—	—	—	66	148	1828
1894–95	722	159	9	351	310	231	31	79	37	—	—	—	88	243	2171
1895–96	819	191	10	344	348	243	31	90	33	—	—	—	115	234	2467
1896–97	909	181	14	426	334	222	32	97	35	—	—	—	139	257	2647
1897–98	940	129	23	447	411	226	27	96	60	54	—	—	156	302	2890
1898–99	907	151	21	388	426	281	22	110	62	62	—	—	174	305	2925
1899–00	941	209	23	480	499	344	24	125	63	77	—	—	148	302	3236
1900–01	1093	265	27	517	441	330	27	106	70	86	—	—	160	290	3413
1901–02	1179	345	21	598	492	362	20	107	62	109	—	—	176	237	3656
1902–03	1215	394	18	620	470	314	18	142	55	111	—	—	159	318	3788
1903–04	1252	396	30	675	529	266	14	137	68	118	36	—	137	212	3845
1904–05	1249	399	33	760	496	227	15	121	67	106	33	—	123	186	3790
1905–06	1362	412	50	718	494	192	14	150	80	121	47	—	110	210	3955
1906–07	1418	458	73	752	498	190	14	162	76	138	60	17	95	256	4145
1907–08	1484	473	116	814	500	165	7	176	99	148	68	32	107	262	4421
1908 09	1494	457	188	755	614	253	—	193	101	150	80	41	127	332	4682
1909-10[1]	1567	392	278	695	376	176	—	196	81	120	78	69	93	315	4436

[1] Fall registration.



EDMUND J. JAMES,

President of the University of Illinois.

CHAPTER IX

UNIVERSITY OF ILLINOIS

THESE sketches, being concerned only with the present and future of the greater American universities, contain as few references to the past as possible. In this instance, however, it seems desirable to go back a bit and mention an event that had a decisive influence on higher education in this country. I refer to the Glacial Epoch. The great ice sheets which covered the northeastern portion of the United States modified the configuration and composition of the land, and so in a measure determined, not merely what crops should be grown and what industries should thrive, but even such remote and refined things as what studies should be pursued and what books read and written. Inside the glacial boundary the average thickness of the subsoil is about a hundred feet. Outside it is about five feet.[1] This means that agriculture in the one case has a reserve fund of twenty times the other. The importance and far-reaching influence of this factor on our civilization may be seen by a glance through the Statistical Atlas of the United States, published in the census report, and a comparison with a geological chart of the Pleistocene Period. On many of the maps, such as those giving the density of population, especially white and foreign-born, the number of cities supported, the value of land and its produce, the value of manufactured products, and the degree of literacy, the glaciated area is clearly indicated. In Europe similar effects are shown in various ways. For example, the rising

[1] Chamberlin and Salisbury's *Geology*, III, 539.

flood of the Protestant Reformation was checked at the terminal moraine.

The glaciated area of the United States, which is, roughly, New England, New York, the northern part of Pennsylvania, and the region embraced by the arms of the Ohio and Missouri rivers, contains most of the important universities of the United States. About three fourths of the college students are comprised within this district, which is less than a fourth of the total area of the United States. Of the institutions accepted by the Carnegie Foundation 87 per cent are in the glaciated region. Of the 3471 Ph.D. degrees granted during the period 1898–1909, 79 per cent were from glaciated universities, 85 per cent, if we exclude Johns Hopkins.

In the production of men of genius the glaciated area shows the same superiority over the rest of the country as in the production of wheat. Seventy-six per cent of those in the Hall of Fame of New York University, 89 per cent of Professor Cattell's one thousand eminent men of science, 66 per cent of his eminent Americans in general,[1] 70 per cent of the names selected for the National Institute of Arts and Letters, 85 per cent of the members of the National Academy of Science, come from the glaciated area. These figures have no definite value. They are merely rough calculations from such data as I have at hand, but they are sufficient to illustrate the point. A serious study of the question — which some aspirant for the doctorate in sociology might well undertake — would have to take into consideration the many other controlling factors, both human and geological, such as heredity, legislation, climate, the location of cities on alluvial deposits, and the varied effects of glaciation on soil formation.

I introduce it here merely to call attention to the exceptional position of the University of Illinois, which must

[1] *Science*, November, 1906, and August 13, 1908.

provide for the needs of both a glaciated and a nonglaciated population. The State was plowed over for hundreds of thousands of years by the two great ice sheets originating respectively in Labrador and to the west of Hudson Bay, 1500 miles away. The lines of their ebb and flow can be traced on demographic charts as well by the dikes and mounds they left as ripple marks on the land. Here the glaciation reached a more southerly point than anywhere else in America, extending almost to the southern boundary of the State, and leaving only a few counties in the tip untouched. This driftless area is commonly called "Egypt" by those who live elsewhere, though the term is sometimes used to include the whole region below the southern line of the second great ice invasion of 20,000 to 60,000 years ago, which was more important in its effects on Illinoisian history.

The terminal moraine of this loops around the University of Illinois about forty miles to the southward. Land just inside of it sells for three times as much as land outside,[1] and I presume it would be possible for a professor in the university to pick out the glaciated from the nonglaciated examination papers. I did not have an opportunity, however, of putting this to an experimental test.

But whatever the validity of these speculations, for which the University of Illinois is in no wise responsible, the policy of the university is dictated by its position. The aim of our legislation is to promote uniformity. All of the States receive the same educational subsidies from the Federal government, although one State may do a thousand times as much good with the money as some other. Inside a State the school authorities do their best to equalize edu-

[1] For further examples of the effects of glaciation on the character of Illinois and its people see "A Case of Geographic Influence on Human Affairs," by Professor G. D. Hubbard of Ohio State University, in the *Bulletin of the American Geographical Society*, XXXVI, 145.

cational opportunities. This is especially the function of a State university as the head of the public school system. Degrees of latitude make a greater difference in the character of the people than do degrees of longitude. The University of Illinois has a north and south range equal to that between Boston and Richmond or Leipzig and Venice. It must keep in touch with both Chicago and "Egypt," and render equal service to its two masters. Although the researches of Galton and others have shown that the production of genius is no miracle, but is subject to the same laws of heredity and environment as anything else, this should not lead to a scientific fatalism. The greatest man of whom Illinois can boast was the product of the driftless area.

It is particularly appropriate and significant that an ox yoke hewn by young Abe Lincoln occupies the place of honor in the ornate library of the University of Illinois. It is especially the aim of a State university to reach and help such boys as he, and I am not so pessimistic about our educational methods as to think that a college course would have hurt him. But to discover the exceptional man and fit him for his peculiar sphere, to pick out a farmer boy and make a lawyer and President of him, is only part of the purpose of a State university. That is something that the universities have always done in some degree. But a State university of the type of Illinois has a higher ambition, and has undertaken a more difficult task. It would not only raise the industrious, but would raise the industry. It would make more giants, but it also desires to elevate the race at once. Lincoln had to abandon the ox yoke in order to find a field for his powers, but the modern farmer boy may find it as fascinating to run a motor plow as a political machine.

Many of the State universities, as I have said, were started as classical colleges and were afterward induced to

add industrial departments by the Morrill Act funds. In some cases this process was reversed and the agricultural and mechanical colleges gradually introduced humanistic studies until they developed into well-rounded universities. The University of Illinois is the most conspicuous example of this, but New England is developing State universities by the same process, as is shown by Maine. In this way or some other all of the Eastern States will, in my opinion, ultimately acquire State universities, for their endowed institutions, superior as they are in some respects to the State universities, do not take the place of them, any more than the existence of good private schools can obviate the necessity of public schools.

This development of the Morrill Act colleges was made possible because of one phrase in that remarkable document. It provides for the

"endowment, support and maintenance of at least one college (in each State) where the leading object shall be, *without excluding other scientific and classical studies*, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Illinois claims the honor of originating the movement for the Federal endowment of industrial education in every state. It was first proposed by Professor Jonathan B. Turner of Illinois College, at a farmers' convention held at Granville, Illinois, in 1851. The agitation thus started resulted in a formal request in the form of a joint resolution by the Illinois Legislature addressed to Congress and passed February 8, 1853, asking the Federal Congress to appropriate five hundred thousand acres of land to each State in the Union for the purpose of providing for the liberal and practical education of the industrial classes by the establishment of a higher institution in each state. This was four

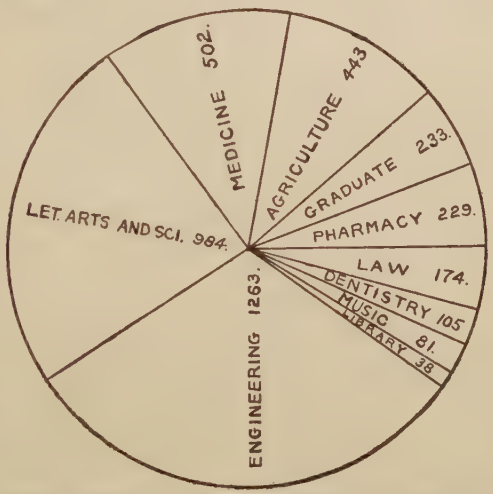
years before Senator Morrill introduced his first bill into the House, December, 1857. This petition of the Illinois Legislature was sent to every other State in the Union at the time, asking their legislatures to join in the same request. Mr. Morrill has never claimed that he ever thought of such a proposition as this, prior to the year 1856. Before that these petitions had been presented to Congress and printed in the Senate and House journal. They had been discussed at length in the *New York Daily Tribune*, February 26, 1853, and in the semi-weekly *Tribune* of March 1, and other papers of that time. The name of "Turner" is therefore appropriately put upon the front of the great agricultural building of the University of Illinois.

The Morrill Act, signed by Abraham Lincoln in 1862, was early taken advantage of by the State from which he came, and in 1868 the "Illinois Industrial University" opened its doors. The name was a compromise; so was its policy. The new institution suited nobody. "The industrial classes," for whom it was designed, contemned it; the other colleges of the State disliked it; the Legislature neglected it.

In 1885 the word "Industrial" was dropped, partly because the American conception of a "university" had by that time been expanded so that it was not necessarily exclusive of practical studies, more because the term "industrial" had been contracted to mean "penal," owing to the prevailing custom of those days of employing manual training for the reformation instead of the formation of character. In the early eighties the school superintendent of a neighboring county wrote asking if three unruly children of a widowed mother, the oldest thirteen years of age, could be provided for in the Illinois Industrial University. Graduates of the institution, applying for employment, were liable to be asked: "What were you sent up for?"

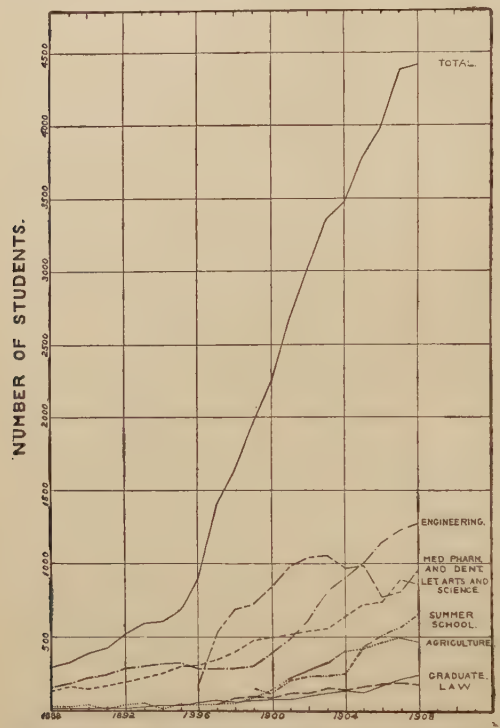
The University of Illinois can, indeed, hardly be re-

garded as more than sixteen years old. It was not until about 1893 that the State really began to take pride in it and to give it proper support. Besides receiving about that time larger appropriations from the State and Federal governments, its growth and ambition were stimulated by two events, the Columbian Exposition and the founding of the University of Chicago. The effect of the latter was very much like the influence of Leland Stanford on the University of California. It might have been supposed that Illinois, since it had not hitherto manifested any ardent desire for advanced scholarship and research, would have had its needs sufficiently met by one first-class university. But there is a difference between the East and the West in this respect. In the East the State authorities seem to say to themselves: "Here is something that is being done very well by private enterprise. There is no need for us to concern ourselves with it." In the West they say: "Here is something that is being done very well by private enterprise. Why can't we do as well?" The Westerner is always willing to match pennies with any multimillionaire in the country. If Mr. Carnegie puts up a library building in one city, some other city will pay for one out of its own pocket. If Mr. Morgan should establish an art gallery in Norman, Oklahoma, to hold his London hoard, the next



DISTRIBUTION OF STUDENTS BY DEPARTMENTS, UNIVERSITY OF ILLINOIS, 1908.

Legislature of Kansas would pass with a whoop a bill for a bigger art gallery on the campus at Lawrence. So it happened that when Mr. Rockefeller founded a university at Chicago, the State university was not content to complement it by supplying the technological departments which it lacked, but aspired to rival it on its own field. When the University of Chicago opened, there were only nine graduate students in the University of Illinois. Now there are 233. The total number of students has increased in the same period from 518 to 4400. Two years ago the Illinois Legislature appropriated $50,000 a year, specifically for graduate work in arts and science, the first time that any legislature has formally recognized this as an essential function of a State university. The total appropriation for the support of the University and its various lines of work made by the recent Legislature was $2,273,000 for the biennium. This is not unduly generous, considering the wealth of the State and the extent and character of the work done by the University; in fact, it is not so much as other States are doing. On the basis of actual valuation,



STUDENTS IN THE UNIVERSITY OF ILLINOIS, 1888–1908.

the four States here considered tax themselves for the support of their universities in the following ratio: —

Wisconsin	22 cents on $1000
Michigan	19 cents on 1000
Minnesota	11 cents on 1000
Illinois	7 cents on 1000

Scarcely less important than the formal recognition of the importance of graduate work by the Legislature is its approval of the payment of higher salaries. I note the resolution in full as an interesting example of legislative rhetoric and an illustration of the attitude taken by the people of a Western State toward their university: —

JOINT RESOLUTION OF THE ILLINOIS LEGISLATURE IN RE SALARIES AT THE UNIVERSITY OF ILLINOIS

WHEREAS, It is the evident will of the people of this Commonwealth that the University of Illinois shall be made so complete in its organization and equipment that no son or daughter of this State shall be obliged to seek in other States or other countries those advantages of higher education which are necessary to the greatest efficiency of social service either in public or private station; and

WHEREAS, The State of Illinois has imposed upon this institution, in its agricultural and engineering experiment stations and in its graduate school, the duty of carrying on extensive and important investigations of vital interest to the agriculture, industry, and education of the State, and the conduct of these investigations calls for the very highest ability and the most thorough training on the part of those intrusted with their supervision; and

WHEREAS, The great progress of this institution in the last five years has attracted the attention of the whole country and made other institutions desirous of drawing away the members of the faculties in said university; and

WHEREAS, The present schedule of salaries is not sufficient to enable the institution to compete on equal grounds with other State and private universities in the United States; therefore,

Be it Resolved by the Senate, the House concurring, That it is the sense of this General Assembly that the board of trustees of the

University of Illinois should adopt such measures as will in their judgment attract to, and retain in, the service of the university and the State the best available ability of this and other countries.

Those who know the natural aversion of the average legislature to paying anybody a high salary will appreciate the importance of this action.

The objection might be raised — in fact, the objection was raised in the Assembly when the above resolution was pending — that this was a matter which should be left to the trustees, as they had ample authority to pay such salaries as they saw fit. This is true, and it is also true that the graduate school could have been in some way worked in without making it conspicuous by calling for a specific appropriation, as other State universities have done. Most university presidents prefer to have as little legislative interference as possible. They would rather have a lump sum to spend as they please than have to explain things, not because they are doing anything to be ashamed of, but because some of the work that they regard as of the highest importance is not appreciated or approved of by the general public. It is easier for a university to get an appropriation for some popular form of public service and then use as much of it as possible in support of some related form of pure scientific research.

But it is evident that President James has adopted the opposite policy from most State university presidents. He seeks rather than avoids legislative attention, and takes the people into his confidence when he does not have to. He is trying to educate the public to the expressed approval of his ideal of a university, instead of being content with a tacit permission to do what he likes. Instead of saying, or implying, to the legislators: "If you will give me this money now, I won't need to ask for so much again," he openly announces that present appropriations mean larger ones in the future. The Regents of the University of Min-

nesota did not permit the establishment of a graduate school until they were assured that it would not cost anything. President James explains not merely to the trustees, but to the Legislature and to the public, by means of a circular, that a graduate school is going to cost a great deal, that it is the most expensive form of education, and that it applies directly to the fewest students, but that it is an essential part of a true university.

This is certainly a more frank and democratic policy. It will be interesting to watch whether in the long run it proves the more profitable to the university. Of course it brings the university into the field of political controversy and arouses a storm of incompetent comment that would drive an Eastern college president to retirement in disgust. One irate Chicago business man went so far as to say that it would be better for the State if the university were burned to the ground. But, on the whole, the university has gained in prestige through this greater publicity.

Another manifestation of the same policy of seeking cooperation outside the university is the system of advisory committees. These are appointed by the various agricultural societies of the State to assist in directing the investigations of the Agricultural Experiment Station. These committees are designated by the law authorizing the investigation. For example, the bill appropriating $15,000 for experiments on improving farm crops contains the following clause: —

> Provided, That the work outlined in this section shall be carried out on lines to be agreed upon by the directors of the Agricultural Experiment Station and an advisory committee of five, to be appointed as follows: Two by the Illinois Corn Growers' Association, one by the Illinois Seed Corn Breeders' Association, and one by the Illinois Grain Dealers' Association, and one by the Farmers' Grain Dealers' Association.

Other organizations coöperating with the university in

a similar way are the Live Stock Breeders' Association, the Farmers' Institute, the State Horticultural Society, the State Dairymen's Association, the Sugar Beet Growers' Association, and the State Florists' Association. Here, then, are the thirty-five prominent men of the State, not merely interested in the investigations of the station, but sharing the responsibility for them. That is, some of the organizations that not many years ago were passing resolutions denouncing the university are now coöperating with it. Of course there are some difficulties involved in this system of divided control, and it is a question how far it is wise for a university to share its responsibility in this way; but besides the obvious advantage of securing a greater appreciation and support for the research work of the University, the plan is of material benefit to the work itself. The criticisms and practical suggestions of the advisors, some of whom have been trained in scientific agriculture, tend to direct the investigations toward the problems of the greatest importance and to prevent them from becoming "academic." A piece of research in pure science may be legitimate if it has no possible practical application, but an investigation that purports to be practical and is not, has no reason for existence. Too many of the bulletins of the various experiment stations are of this sort, having neither scientific nor practical value.

The Illinois Experiment Station is able to make its appeal to the people on the basis of definite and profitable results which all understand. By selection of seed corn according to chemical composition it has been found possible to increase its oil content by one third, which would add $2,500,000 to the value of the corn crop of the State for manufacturing purposes. The increase of the protein in corn by one fifth, which has also been effected, would make Illinois corn worth $6,000,000 more a year for feeding purposes.



THE AUDITORIUM, UNIVERSITY OF ILLINOIS.



University of Illinois.

THE REGIMENT OF UNIVERSITY CADETS ON THE CAMPUS AT URBANA.

But all States have agricultural experiment stations of some sort. More interest, therefore, attaches to the Engineering Experiment Station, which is a peculiar feature of the University of Illinois. I called attention in a previous chapter to the curious fact that whereas the Morrill Act put agriculture and the mechanic arts on an equal footing, their development in the universities has been very different. The agricultural departments, having few students at first, went in for research and popularization. The mechanic arts or engineering departments had enough to do taking care of undergraduates, and mostly confined themselves to that. The reason of this was that there was a demand for college-trained men in the engineering profession, but not in agriculture. Now, however, there is in engineering a tendency toward expansion, both outward and upward, toward popular education and research. Wisconsin has led in the former, Illinois in the latter.

Neither of these innovations has met with general approval and acceptance in other States. More than once I have been frankly told by the head of a college of engineering that he did not believe in either outside courses or research. But I fail to see why such work is not as legitimate and desirable as it is in agriculture, especially in Illinois, where the products of the manufactories are worth three times as much as the products of the farms. From 1860 to 1906 Illinois rose from the rank of the fifteenth State to that of the third in the value of its manufactures.

Why should it be thought less proper for the experts of the State to inform the people that one kind of coal gives twice as much heat per ton as another than to state that one breed of cattle gives twice as much butter per cow as another? If the university may test fertilizers, why may it not test car brakes?

To some people there seems a vital difference between

the two cases, probably due to a feeling that agricultural research is in aid of an industry highly individualized and poorly capitalized, while the syndicated manufacturers are abundantly able to pay for any investigations they need in their business. The effect of applied science, however, is to obliterate this distinction. The dairy business, for example, as it becomes scientific, tends to come under coöperative or corporate management, and, on the other hand, the publication of tests of materials and processes tends to break a monopoly based on private knowledge.

The Engineering Experiment Station has ten research fellowships paying $500 a year. It has issued thirty-five bulletins since its foundation five years ago, covering a wide range of practical problems. The most timely and useful of these investigations is perhaps the testing of reënforced concrete. Here is a new material combining the solidity of stone with the strength of steel, revolutionizing our ideas of building and giving rise — or at least it should give rise — to a new order of architecture. But concrete is of uncertain temper. "When it's good, it's very, very good, and when it's bad, it's horrid." The difficulty is that the bad looks just as safe and solid as the good. We must learn how much it will stand before we can trust it. That is why they are smashing down concrete columns a foot square and twenty-five feet high in the laboratory of the University of Illinois. Great beams of it are pulled and twisted and bent and broken. Another instrument of torture takes a beam and pushes down on it and then lets up suddenly, 1,500,000 times a day, keeping up this sort of nagging without any rest nights or Sundays until the beam gets all tired out and loses its nerve and goes to pieces. It somehow seemed more cruel to me than the vivisection of dogs and guinea pigs.

But we do not know enough yet even about such common material as structural steel. A bridge was being con-

structed across the St. Lawrence River at Quebec, a longer span than had ever been attempted. When it was half done, some of the rivets gave way and it fell of its own weight, killing seventy-four of the workmen. Just a mistake in the formula, that's all. Now, after it has happened, the bridge commission has sent to this Illinois Laboratory of Applied Mechanics to have made a series of a hundred tests on riveted joints of nickel-steel plates as a basis for the new plans. A force of 500,000 pounds will be employed in pulling some of the joints apart, and the slipping of the plates will be measured to a ten-thousandth of an inch.

The students at the University of Illinois are not stationary engineers. They have a traveling laboratory, a dynamometer car, and when the B. & O. wants a tonnage test made or the New York Central proposes to electrify its metropolitan terminals, they go and do the work. I was given an opportunity to make a trip on the car myself. The car is owned jointly by the Illinois Central and the University, and looks like an ordinary caboose on the outside. In the interior of the car is the automatic recording apparatus. A big roll of paper passes through it as through a newspaper printing press, and on top of it half a dozen pens are tracing lines in red ink and making jogs in them occasionally, whenever there is anything worth mentioning. The time, the distance, the pull on the drawbar, the horse power, and the velocity and direction of the wind are all recorded on the sheet. By looking at it one can tell just what the locomotive engineer is doing, when he opens the throttle, when he puts on the brakes, when he increases the draft, and when he swears at the fireman. This last point I did not get from Professor Goss. One of the boys on the car told me.

They have another dynamometer car, of 200 horse power, fitted up with apparatus for electrical as well as traction

measurements, and used in testing the efficiency of trolley-road operations. Railroading is, in fact, a specialty of the University of Illinois, as is natural in the State holding the first rank in aggregate mileage. The five courses given in this branch range from the technical to the administrative side of the railroad business, from the making of engineers to the making of financiers. Whether the latter includes a course in political economy on the art of getting a franchise through the Legislature cheaply I did not ascertain.

There has been no school of mines in Illinois as there is in California, Wisconsin, and Minnesota, and as a separate institution in Michigan; but after the terrible disaster in the mines at Cherry, Illinois, in 1909, a State commission was appointed by the governor to suggest changes in the mining code and any other possible improvements looking toward diminishing the number of fatalities in mines. This commission reported that one of the greatest difficulties in the way of providing a safe system of mining was to be found in the fact that suitable mine inspectors and bosses could not be obtained, *i.e.* men with suitable education and training; and they reported further that the State ought to establish a general system of institutes for the training of miners in all the details of their work, and recommended further that the State university be directed to establish such a system of institutes, and that the Legislature make an appropriation for this purpose. This is a most striking illustration of the faith which the State is coming to put in the university and its work.

The State Natural History Survey was one of the oldest of the auxiliary scientific bureaus, beginning its work thirty-three years ago and being annexed to the university in 1885. A volume with forty-one color plates on the fishes of Illinois, based on the examination of 200,000 specimens, has just been completed. The State entomolo-

gist has also his headquarters in the university and contributes to its collections.

One of the biggest and busiest buildings on the campus is that presided over by Prof. W. W. Noyes, editor of the *Journal of the American Chemical Society*. In 1909 sixty-three distinct pieces of investigation in pure and applied chemistry were in progress in this department. Here the State Geological Survey and the State Water Survey carry on their routine and research work, and here is the headquarters of extensive nutrition experiments on man and beast. Professor Grindley has a "poison squad" much more perseverant than Dr. Wiley's at Washington and likely to get more reliable results. For a year they have been eating meat containing or not containing saltpeter to discover whether this time-honored chemical preservative is injurious.

As is appropriate in a State having a large German population, special attention is given to the Germanic languages. The only periodical of research, except the bulletins mentioned, published by the university, is the *Journal of English and Germanic Philology*, now in its eighth volume. This department has just been enriched by the acquisition of the library of the late Professor Heyne of Göttingen, 5200 volumes on German literature and philology. Here may also be mentioned the active part taken by university professors in the collection and publication of documents relating to the French period in the history of Illinois.

The library has been a weak point in the University of Illinois. Five years ago it had only 70,000 volumes, fewer than any other of the fourteen great universities. It has now double that number, thanks to Dean Kinley, the head of the new graduate school, who is making a special effort to bring it up to the new requirements. About $50,000 was spent in 1909 in the purchase of books; more, I think,

than any other university has appropriated for this purpose.

I have given an unusual amount of space to the graduate work of the University of Illinois because this is just now its most interesting line of development, although by this disproportionate attention I have done an injustice to the other universities where research is an old story. It must be understood, therefore, that Illinois is still, as it has always been, essentially an undergraduate institution. When these fourteen universities are arranged according to the number of doctorates they have conferred, its rank is fourteenth. The Carnegie Foundation, which has come to be the arbiter of destinies, has refused to admit Illinois to its privileges, while accepting Michigan, Wisconsin, and Minnesota. President Pritchett mentions two departments as the chief reasons for the refusal; these are the academy and the medical school.

All of the State universities have in their early days been obliged to keep up preparatory or sub-Freshmen departments, but they have usually been dropped before the university reached the age of Illinois. It is indeed anomalous that high school pupils should be working under the same faculty and in the same building as graduate students. But whether the University professors should ruthlessly amputate this vestigial organ in order to improve their own financial prospects is a difficult question. A State university is obliged to keep in touch with all parts of its territory. Its attitude is very different from that of a private university. One aims to be inclusive and the other to be exclusive. The private university is always saying to itself: "How high can we raise our standards of admission without losing students?" The State university says: "How low can we place our standards of admission without losing prestige?" President Hadley states that the primary object of a university is to maintain high standards of scholarship, and

that a university which fails in this is not worthy of the name.[1] A State university does not care so much for the maintenance of standards as for the opportunity of public service, and it is not worthy of the name of State university if it is not willing to risk its reputation to save some young man or woman in a backwoods county from an illiterate life. It is this feeling, more than low educational ideals or the desire for numbers, that makes the State universities sometimes more easy of entrance than seems proper to Easterners.

As I have suggested, Illinois is very unevenly developed educationally. It has some of the best secondary schools in the country and some very poor ones. Only about two thirds of the high schools are capable of preparing for the Freshman class of the University.[2] Ten per cent of them give no foreign language, and 65 per cent of them none but Latin. The University of Illinois stipulates fifteen units for admission, while the University of Wisconsin requires only fourteen, but there is this difference, that the requirement is rather strictly adhered to in Wisconsin, while in Illinois students may be admitted with thirteen units on condition of making up the deficiency in the academy within a specified time. Less than 10 per cent, however, enter in this way. President James, in outlining his policy on his inauguration in 1905, stated his belief that the Freshman and Sophomore work should not be done at Urbana, but in fifty or more institutions scattered over the State, the same idea as President Jordan has. The university,

[1] "A university has two distinct objects in view. Its primary object is to establish and maintain high standards of scientific investigation, general culture, and professional training. Its secondary object is to teach as many students as possible in the different lines with which it concerns itself. The two things cannot well be separated. Unless the matter of standards is held in the foreground, a place does not deserve the name of a university." President's Report, Yale University, 1907.

[2] "A Statistical Study of Illinois High Schools," by F. G. Bonser, *University Studies*, May, 1902.

he said, "must be lopped off at the bottom and expand at the top." He is succeeding in the second part of his program, but has made no progress in the first. Yet this must be done in some way before many years. It has been proposed to convert the academy into a model school for the department of education. This might be done, but the model school needed by that department as its laboratory for practice and experimentation is a very different thing from the existing academy. It needs a well-equipped building, with all grades from the kindergarten up, not a few basement rooms full of backward Freshmen hurrying to catch up with their class.

In regard to the medical instruction, the University of Illinois is also in an embarrassing position. Being precluded by its location in a small town from establish ng a complete course, it has adopted schools of medicine, pharmacy, and dentistry in Chicago. The College of Physicians and Surgeons is no great honor to the university, and the connection is purely nominal. The university gives to the medical school its name, and the medical school gives to the university its roll of students. The graduates and advanced students of the university when they leave Urbana do not usually go there for their medical work. They prefer Rush, which belongs to the University of Chicago, just as the Yale graduates are apt to go to Columbia or Johns Hopkins rather than to the Yale Medical. Probably the best thing that can be done under the circumstances is to develop at Urbana strong courses in such medical and premedical work as can be done away from a large city. It is questionable whether a complete medical school of high grade could nowadays be built up in a small place, as was done in Michigan.

The situation of the University of Illinois accounts for many of its peculiarities. The stranger is apt to think it an out-of-the-way place, but when he gets there he learns that

it is really in the middle of things. The center of population of the United States is headed that way and due to arrive about 1960, and the center of manufactures is coming along in the same direction by slow freight.

Comparatively few people in the East know in what town the University of Illinois is located. Neither do the people who live there. Ask one man on the street and he will tell you "Urbana." Ask the next and he will tell you "Champaign." It depends on which side of an imaginary line he happens to reside. This line runs along one edge of the campus, placing the university technically inside the corporate limits of Urbana, but that does not make any difference in the eyes of the Champaigners. The university is between the towns, as the University of Minnesota is between St. Paul and Minneapolis, but the smaller the cities the sharper the rivalry. Urbana is the old county seat. Champaign is a newer "spite town," built by the railroad, the larger and more businesslike of the two. Their commercial centers are only about two miles apart, and they run together, indistinguishably to a stranger, making a community of about 20,000 people, not counting the students. But the question of which name shall appear on the letter heads of the university has been the subject of bitter controversy. It is unfortunate that one of the great universities of America should have its educational policy affected by personalities resulting from local squabbles over postal facilities, patronage, politics, shopping, residence, and street car lines. This parochial atmosphere infects the campus, and slight differences of opinion and mode of life assume an exaggerated importance and become aggravated into antagonisms. It is a common fault of college communities, especially in small towns. They are nearly as bad as frontier army posts in this respect. As soon as the University of Illinois grows up to its size, this phase of its life will disappear.

The question of whether a university should be located in a large city or in a small one must also be worked out by experiment. The University of Illinois bears about the same relation to Chicago and the University of Chicago as Stanford does to San Francisco and the University of California and as Princeton does to New York City and Columbia. There is a certain similarity in character between the three, resulting from their country environment. But the first impression is different, because Princeton and Stanford are distinguished among American universities by the beauty and harmony of their architectural design, while in the University of Illinois no design is apparent, and not much beauty. The buildings, with few exceptions, are frankly utilitarian in style, but good in their way, getting the greatest possible room for the least amount of money, better than some of the more pretentious buildings of the University of Minnesota. One good thing about them, they are mostly designed by university men. It makes a very bad impression to find that many of our universities have not sufficient confidence in their own architects to employ them on their own buildings. The most ambitious of the recent buildings, the new auditorium, is not a success. It is admirably contrived for seeing and emptying, but not for hearing. The hearing is too good. It echoes like the baptistery at Pisa. A solo is spontaneously multiplied into a chorus. The woman's building, by McKim, Mead and White, though generally admired, is, to my mind, not altogether satisfactory. The Georgian style has no especial appropriateness to the Illinois prairie, and in its arrangement it is not so well adapted to its purpose as the corresponding buildings of Minnesota, Wisconsin, and Michigan.

On the whole, I think, the University of Illinois would do well to work out its own architecture. The variety in the color of the existing buildings gives a striking demonstration of the wealth of Illinois in brick clays of different

kinds. Then there is a department of ceramics, one of the few schools of its kind in the United States, offering three distinct four-year courses. This department seems to keep itself rather too much aloof from the rest of the university. It appears to me that it might coöperate with the artists and craftsmen on the one hand and with the structural and concrete engineers on the other in the development of some autochthonous art industries. I was much interested in the attempts at new forms of mural decoration in mosaic, not entirely successful yet from an artistic point of view, but indicating a commendable spirit of enterprise and self-confidence.

Enterprise and self-confidence are characteristic of the Illinois temperament, and ought to be manifest even in a university. The Illinois student should be ambitious to do things for himself, not merely be content to read about them or think about them. It seemed to me that there are some indications of this disposition in both faculty and students. In my tour of the universities I found I could sometimes learn more about the spirit of an institution by being passively towed around than by striking out for myself. At Harvard my guide showed me the room in which the Prince of Wales had once slept; at Princeton the greatest treasure seemed to be a collection of Virgils, in a locked case; in the University of California I was taken to the Greek theater; in the University of Illinois they pointed with pride to a smokeless chimney. I did not believe it was working until I went below and saw the coal going into the furnace, black, cheap, fine stuff it was, such as clouds Chicago, but it came out of the top in a state of innocuous oxidation. The school of engineering at the University of Michigan has a high reputation, but somehow I do not feel the same confidence in it as in that of Illinois, because it had one of the smokiest chimneys I ever saw.

I like the way the students put their heart into their work in the University of Illinois. Their studies are to them not a thing apart from their real life, but a part of it. They take pride in their profession; they put sentiment into it and get amusement out of it. In the engineering laboratory I saw a Brown and Sharpe automatic gear cutter, bearing a brass tablet stating that it was given to the university as a memorial to an engineering student who died soon after graduation, C. L. Adams, of the Class of '96. Now this is better from either the sentimental or the practical point of view than if the thousand dollars had been put into a marble shaft off on the hillside or in a monumental drinking fountain that does not work. There would be nothing about these to remind one of the young man whose career was stopped at its commencement. But this machine is a true memorial; it is something that he himself would have taken pride in; it is in the noisy, busy shop, the scene of his activities; it is used by his schoolmates, and is in a very real sense a perpetuation of his influence and personality.

It is said one does not know a foreign language until he dreams in it. It might likewise be said that nobody really gets hold of a science until he plays with it. That is what the Illinois boys do with their electricity. I presume that the Princeton or Pennsylvania boys could beat them at a comic opera, for they can give one that is almost as good — or as bad — as the real thing. But I am sure that Princeton or Pennsylvania has nothing like the electrical show given annually at the University of Illinois. Three floors of the electrical engineering building are devoted to it, fitted up with booths where all sorts of queer things are to be seen and felt, more things than are dreamed of in any natural philosophy. There are model electric railways in operation, demonstrations of wireless telegraphy and Röntgen rays; an electric incubator (chickens only); a model kitchen, where

the happy housewife has nothing to do all day but press buttons; a handy safe-boring outfit, a great timesaver for burglars; and a mysterious "House of a Thousand Sensations," which would make a fortune on Coney Island. For weeks in advance the students work night and day in wiring the booths and devising new apparatus.

Something of the same professional pride crops out in the student pageants on circus day and other festive occasions, as it does in the universities of Michigan and Missouri. There is developing a trade symbolism that shows a tendency to take artistic as well as grotesque forms. This is promising, because it reminds one of the spirit of the medieval guilds out of which the art of the Renaissance took its rise. The tourist in an Italian gallery, whose idea of art is something as far removed as possible from "trade," gets a painful shock when he discovers that the statue or picture he is told to admire owes its origin to the woolweavers' union. But our commercial and industrial conditions are becoming increasingly like those of the city republics of the Renaissance, and it would be strange if they did not bring in similar art forms as well as less desirable features of that civilization.

There are other student activities that I should like to describe if I had space, for many of them show an encouraging originality and spontaneity: the peanut banquets of the agricultural students; the maypole dance which is the women's pageant; the Wild West shows; the powwows of the Illini tribe — the students are traditionally descendants of these Indians, and occasionally show it by an eruption of barbarism; the Spanish plays in which Filipinos and Argentinans and Americans take part; the "Welcome to Spring," a simultaneous outburst of enthusiasm, unpremeditated in origin and incalculable in its manifestations, occurring on the first warm evening; and, last and perhaps most worthy of the attention of other State universities,

the interscholastic athletic meet. In this the athletic youth of the high schools of Illinois come together in competition on the State university campus. At the interscholastic meet of 1908 eighty-four schools were represented and the number of entries was nearly 400. Since each local champion is apt to be accompanied by several of his schoolmates, and all are royally entertained, they have a chance to become acquainted with the university under the most favorable auspices. The students from all parts of the State get to know one another, and the high school teachers who come with the delegations in many cases derive as much benefit from this association with each other and the university men as they do from a session of some formal conference. After the games come the student circus and a ball in the armory. The fraternities take advantage of the opportunity to pick their men and even to pledge them several years in advance of their matriculation. The rush line is being lowered year by year, so we may expect before long that every fraternity will have its cradle roll, like some of the fashionable schools of the East.

There are no university dormitories for either sex; but the Episcopalians have started one for young women and the Presbyterians for young men. There are thirteen fraternity and five sorority houses, and about a fifth of the student body is comprised in these organizations. The strength of the fraternities is remarkable when we consider that they were prohibited by law from 1881 to 1891. The Cosmopolitan Club of the University of Illinois is the first of the associations of foreign students to own a home, a $10,000 building, housing twenty-five students, and providing clubrooms and a polyglot library. The largest foreign contingent at the university is the Asiatic, numbering twenty-nine not counting the Filipinos, of whom there are thirteen, more than in any other of the universities. I am reminded of the interest taken in Spanish-speaking students by seeing on my

desk a pamphlet entitled *Escuela de Ingenieros y Administradores de Ferrocarriles de la Universidad de Illinois.* There is no general clubhouse for students, but they hope to have one soon. In the meantime the handsome new Y.M.C.A. building serves the purpose very well. This organization is the largest of its kind in the college world, having 900 young m n enrolled in its Bible-study classes.

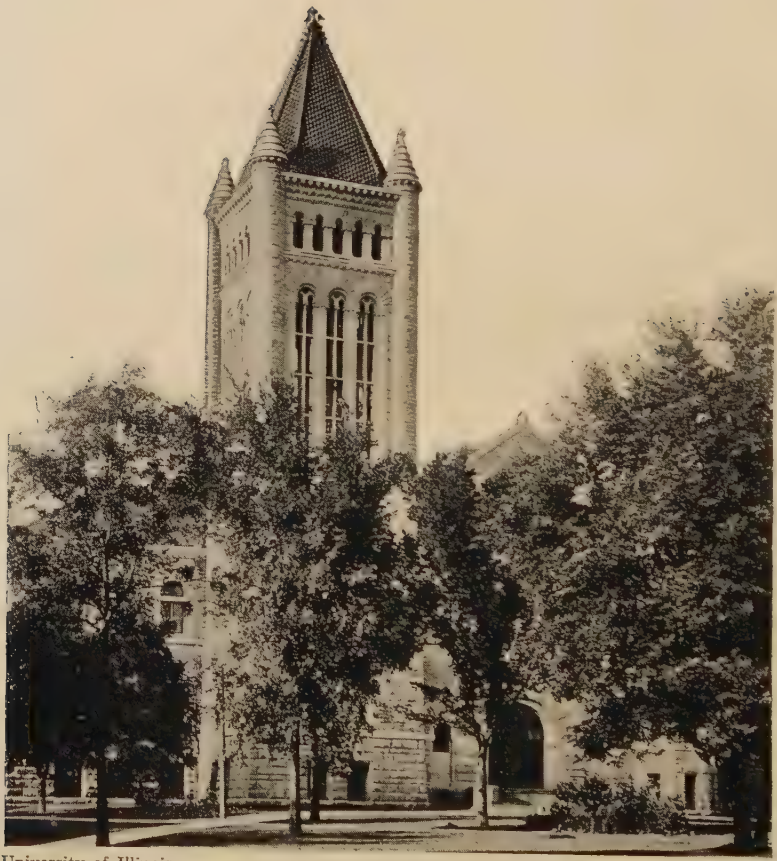
One influence on student character which should always be borne in mind in comparing a State university receiving the Morrill funds with the Eastern endowed universities, is the military drill. Four words in the Morrill Act, "and including military tactics," have brought it about that all over the country the educated agriculturists and engineers are the only classes to receive training as soldiers. This is ordinarily required only in the first two years, but those who show special proficiency usually remain in the cadet corps as officers and sometimes enter the milit a or regular army afterward. They regard it as a point of honor to respond to any call for volunteers in a national crisis, very much as do the men who have been educated at West Point and then entered civil life. Their university training is not merely setting up exercises and the manual of arms, but includes a comprehensive course in military science.

There is certainly something very impressive about the transformation scene which takes place at the drill hour, when at the sound of the bugle call the students drop their books and pick up rifles. They come trooping into the big armory from all directions, one from the Greek alcove, another from the forge, frat and barb, country or city bred, some of them very unsoldierly material, careless in dress and slouchy in bearing. From the interior of the armory come the sounds of scurrying feet on the smooth floor, a rattle of arms, a rapid rollcall, and suddenly there pours

out from the arched doorway a column of cadets, wheeling by fours into the street, erect, trim, and uniformed. Company after company salute the colors, an endless column it seems, for there are 1200 cadets and 100 officers in this university regiment, with a military band of seventy pieces. And this transformation of a crowd of miscellaneous individuals into one human machine is effected automatically. The students do it themselves. The professors are not there to criticize and mark them. The commandant has, apparently, nothing to do but review the regiment.

As peace-loving laymen we all piously hope that these rifles will never be aimed at anything but a target. Still we must all realize that this training is not entirely useless, although it may never be used. The psychological effect is doubtless more important than the physical. The man educated in a State university has a unity of loyalty that no other gets. His college spirit, his State pride, and his patriotism are inextricably commingled, for they have grown up together. When a Princeton man gives the Princeton yell he is not hurrahing for New Jersey. But when an Illinois student yells "Illinois," he means the campus, the State, and the country altogether. It is a football game and a Fourth of July rolled into one. His alma mater is his motherland. If he serves his country on the battlefield he marches under the same flag and bears on his cap the same initial as when he was a student.

Coeducational universities give a much more differentiated education to the two sexes than do segregated universities. The students of Princeton and Vassar pursue much the same studies in much the same way. The difference between them is chiefly geographical. The young men and women of Illinois, although on the same campus, get a very different sort of training in some respects, and more adapted to the different spheres which are assigned



University of Illinois.

THE LIBRARY BUILDING.

to them in after life by our civilization. One of the most valuable features of the coeducational system, but one often overlooked, is its flexibility and automatic adjustment to changing conditions of occupation and taste. The differentiation of employment which prevails at any given period seems to that generation normal and eternal, but history shows that the boundary line between the spheres of man and woman is shifting constantly. The authorities of a coeducational institution do not have to act as a boundary commission. They are not obliged to determine, or, more properly speaking, to decide, in advance what it is proper for men or for women to know and to do. This relieves the educators from a great deal of embarrassment, because after they have made such a decision they cannot enforce it, for the social forces which ultimately determine these things are outside their control. In a society whose industrial conditions are changing as rapidly as ours, the maintenance of an equilibrium in a curriculum is as delicate and as necessary as in an aëroplane.

Let us imagine, for example, that in the next thirty years cooking should become exclusively a masculine occupation, as in its higher branches it is now; also that architectural decoration should at the same time go over to the women. That would involve, if any educational preparation is to be given for these professions, the establishment of a department of cooking at Princeton and of wall painting at Vassar. The idea of it is so shocking and absurd that such action would not be taken, if at all, for a generation after it began to be needed. But in the University of Illinois it would merely mean that one or two erratic or far-sighted boys would now be going over to the household science laboratory and a few girls would venture into the architectural atelier. Nothing more serious would happen to them than that they would incur the ridicule of their own sex and the contempt of the other. This is quite natural, and indeed proper, if

not carried so far as to be a serious deterrent. It is the reacting force of the gyroscope which keeps our social system from wobbling. Conservatism, like a gyroscope, strongly resists a sudden and disturbing impulse, but is powerless against a persistent force, however slight. A man or woman who wanders far out of the beaten path is presumably either a genius or a fool, and the chances are, of course, largely in favor of the latter. In the assumed case a woman who stuck to cooking in the next generation would be regarded as unwomanly, and men who persisted in painting frescoes as effeminate.

A philosopher from Mars who attempted to assign to the sexes their respective duties with proper regard to their capacities as shown by their achievements would certainly never hit upon the culinary art as a feminine vocation. There have been great women mathematicians, poets, artists, and warriors, but never in the history of the world a great woman cook, I mean in the creative or artistic sense. *Chef* is a masculine noun for which there is no corresponding feminine form; none has so far been needed. The authorities of the University of Illinois, in establishing a department of household science, however, do not make any assumption as to woman's culinary capacity, nor, on the other hand, is it fair to accuse them of the design of chaining woman to a cook stove forever, as some advanced women think. They simply recognize the existing fact that most women are occupied with household administration in after life, and that this occupation, like any other, needs to be intellectualized by science and idealized by art. The woman's colleges are on the contrary still mostly forcing upon their students a masculine education, one taken over bodily from the men's colleges some time ago, and one which the men themselves are largely abandoning wherever they can. It may, nevertheless, be the best possible form of education for both men and women, but no educator has the right to assume such

dictatorial powers. The chief defect in women, to my mind, is, they have too often in the course of history been content to dress themselves in the cast-off mental clothing of the men.

The work in the household department of the University of Illinois comprises both research and practical applications. I found in the food laboratory of the woman's building a doctor of philosophy of the University of Chicago, who was working on the pectins, a subject of great physiological and moral importance to our domestic life. She had found out the reason why jelly sometimes does not jell. Now the temper of many housewives and the happiness of many homes has been wrecked on that very thing, all for lack of a little litmus paper. But this ancient difficulty disappears at the first touch of applied science.

Of the practical work of this department I must mention the experimental house. This is a house of the ordinary type which is put into the hands of each successive class to make over. They have to plan its arrangement, sanitation, furnishing, color scheme, and equipment for housekeeping with regard to expense, convenience, durability, and artistic fitness. Part of the house is provided with all the modern conveniences, and the other part for a contrast fitted up in the old-fashioned style with all the ancient inconveniences. That is, these modern girls are being systematically trained to look down on their grandmothers. But perhaps that is the aim of all true education. There are some practical advantages in knowing both the old and the new ways of housekeeping, and the differences between them. For example, if one of these domestic science women marries a husband who objects to her new-fangled cooking and demands "pies like mother used to make," she will not weep or talk back. She will simply make him some and see how he likes them.

The domestic science work is, however, a new thing here

and not yet so well housed and equipped as in the agricultural school of the University of Minnesota. On the side of art and craftsmanship it is far excelled by the Teachers College of Columbia University.

In the College of Literature and Arts the women slightly outnumber the men (399 to 364 in 1908), but the proportion of men is increasing. In the College of Science the men strongly predominate (229 to 47), and in engineering and most of the other professional schools, except literary and music, they have practically a monopoly. In the university as a whole the proportion of men to women is about four to one.

Military science required of the young men and domestic science offered to the young women are only two instances among many of the recognition given by coeducational institutions in general to the distinctive needs of the two sexes. It is a curious fact — which ought to be a warning to all of us to avoid *à priori* dogmatism — that the effect of coeducation is not to masculinize the young women, as was at first supposed, but rather the opposite. There is a noticeable tendency in all coeducational colleges to exaggerate what are held to be feminine qualities. Many of the girls overdress. They wear too big hats and too fine clothes to school and affect a dependent and admiring attitude toward the opposite sex. On the other hand, the boys are apt to adopt an exaggerated masculinity, even in extreme cases to take pride in being boisterous and uncouth. I am told by instructors in the women's gymnasiums of State universities that it is impossible to get the girls there to take an interest in athletics, especially in the organization and competition of their teams, as they do in the women's colleges. This induced polarity of disposition is, in my opinion, a wholesome thing, though it has its amusing and sometimes even its objectionable aspects. I am not convinced that the girls ought to play basket ball. I merely wish to call attention

to the fact that one reason why they do not play basket ball with enthusiasm is because the boys they associate with can play it and similar games so much better.

On the other hand, the exclusively masculine colleges often show a tendency toward femininity. Their dormitory rooms and fraternity houses are more luxurious and tasteful than those of the State universities as a rule. Anybody looking at the garments, adornments, and furniture displayed by the Harvard Coöp., many of them styles designed exclusively for its trade, might think at first glance that he had wandered into the woman's section of a department store. Then, too, some of the amateur actors show great delight in dressing up in women's clothes in their college theatricals, and take feminine parts with surprising aptitude. In coeducational institutions they are not so apt to go in for this sort of masquerading except in a spirit of pure grotesquery.

I do not know any reason why the women should have a monopoly of good manners, delicate taste, nice things, and bright colors, and I do not mean to imply that there is anything objectionable in the touches of femininity that occasionally appear in the monastic colleges, but merely to say that in the presence of a strong feminine element they would not be so likely to appear. Our idea of what mental and moral qualities are characteristically masculine or feminine is, of course, conventional. Part of these characteristics are natural, part acquired, and part affected. Since we cannot distinguish between them, we must accept the conventional view and at the same time give it freedom to change. I might mention here that the University of Illinois is exceptional in having three women on its Board of Trustees.

This university is hard to define because its growth in students and faculty has been so rapid that it has not yet "found itself." Dr. T. J. Burrill, who has been a professor

in the institution from its beginning, gave it the impulse toward becoming a true university in 1893 when he presided over it during an interregnum. Under the succeeding administration of President Draper it made great progress, particularly in securing large appropriations from the Legislature, in making the university a power in the State, in developing the practical side of education, and in promoting a healthier student life. Now, under President James, it is being transformed into an institution worthy of its position as the head of the educational system of one of the richest and most populous States of the Union.

STUDENTS ENROLLED IN THE UNIVERSITY OF ILLINOIS, 1888–1909.

	Graduate	Lit. and Arts	Science	Art and Design	Business Admin.	Architecture	Arch. Engineering	Chem. Eng.	Civil Engineering	Elect. Engineering	Mech. Engineering	Municipal and Sanitary Eng.	Railway Eng.	Agriculture	Music	Library School	Pharmacy	Dentistry	Law	Medicine	Summer School	Total (double registration deducted)	Academy
1888–89	4	54	64	9	—	53	—	—	48	—	51	—	—	14	—	—	—	—	—	—	—	297	120
1889–90	6	76	83	3	—	52	—	—	67	—	56	—	—	13	—	—	—	—	—	—	—	356	113
1890–91	3	62	80	4	—	69	—	—	88	—	61	—	—	20	—	—	—	—	—	—	—	387	132
1891–92	8	82	81	7	—	73	—	—	76	18	68	—	—	5	2	—	—	—	—	—	—	420	136
1892–93	9	91	95	10	—	74	11	—	74	57	58	1	—	36	2	—	—	—	—	—	—	518	196
1893–94	22	102	103	12	—	77	13	—	69	82	51	5	—	29	3	—	—	—	—	—	—	578	166
1894–95	31	147	93	10	—	72	17	—	67	94	59	2	—	8	2	—	—	—	—	—	—	602	147
1895–96	28	172	113	16	—	70	16	—	62	99	62	3	—	31	10	—	—	—	—	—	—	682	151
1896–97	57	185	104	18	—	56	13	—	67	86	54	3	—	32	24	—	—	—	—	—	—	880	179
1897–98	78	227	119	18	—	47	14	—	70	90	49	2	—	40	32	—	181	—	—	—	—	1384	199
1898–99	58	251	149	9	—	44	—	—	74	84	66	6	—	48	53	—	140	—	39	408	—	1623	179
1899–00	72	312	158	11	—	43	8	3	90	70	76	6	2	87	47	—	158	—	71	514	148	1955	227
1900–01	75	347	149	13	—	46	13	4	123	90	106	5	3	154	53	—	149	—	92	580	115	2240	253
1901–02	74	383	127	15	—	44	18	5	166	111	132	3	2	228	60	67	182	—	99	673	204	2665	267
1902–03	93	406	135	15	10	57	27	8	197	138	182	8	6	277	82	85	154	134	114	708	228	3011	277
1903–04	118	433	121	19	44	65	36	16	274	178	223	9	3	334	99	77	168	182	110	689	229	3338	257
1904–05	126	481	146	19	54	66	31	26	314	226	215	12	—	405	80	41	150	154	129	653	238	3460	271
1905–06	123	560	147	18	86	90	29	36	340	256	237	9	3	412	65	40	173	143	148	565	423	3762	327
1906–07	160	573	154	17	88	86	44	46	405	282	260	6	11	444	33	91	171	88	162	505	502	3970	367
1907–08	206	654	218	14	109	92	64	51	403	318	259	19	27	491	72	46	259	76	186	476	555	4379	374
1908–09	272	683	235	10	145	103	91	59	417	309	261	18	51	526	65	36	229	106	130	520	664	4638	339

CHAPTER X

CORNELL UNIVERSITY

THE University of Illinois and Cornell University are of the same age and the same size. Both are offspring of the Morrill Act, and their main strength has, consequently, been in engineering and agriculture. Nevertheless, they are about as unlike in general character as any two universities.

The contrast begins with their looks and location. The Labrador ice sheet which planed Illinois furrowed New York. Looking at the map of the State one would think that some primeval giant had tried to climb up the world to get at the North Pole and had dug his ten finger nails into the rock. The supposition would not be far wrong except that the giant was bigger and more inhuman than any the myth makers could imagine. Two of these north and south scratches, or Finger Lakes, were dug deeper than the level of the sea, and at the head of one of them, "far above Cayuga's waters," is Cornell University, perched upon the terraces of the terminal moraine.[1] Two other universities alone can compete with it for beauty of situation — California, which overlooks the Golden Gate, and Wisconsin, which also has an extensive lake view. But Ithaca is unrivaled in the number of glens, gorges, waterfalls, and whatnots within easy walks, rides, and sails. Two beautiful streams, Cascadilla and Fall creeks, bound the campus on either side. Along one of these deep-wooded ravines winds

[1] For an account of the glaciation and scenery of this region see O. D. von Engeln's "At Cornell." Artil Press, Ithaca, 1909.



JACOB GOULD SCHURMAN,
President of Cornell University.

Goldwin Smith Walk, and a bridge across the other affords a fine view of Ithaca Falls, 120 feet high. I have heard the cultural value of the Cornell scenery estimated as equivalent to five full professors. Not knowing in what thermodynamic units professor power is measured, I was not able to verify this estimate. It was, however, the horse power of the falls rather than their esthetic value which fixed the university upon this site. Here young Ezra Cornell first showed his engineering skill in 1831 by running a water tunnel through the soft sandstone and later by damming Fall Creek made Beebe Lake, which gives light and power to the campus. With this he laid the foundation of his fortune, which became the fortune of the university. Here he established his stock farm, which became the campus of the university. So did Senator Stanford at Palo Alto. The two men were much alike in character and career. Both were financial pioneers. They made their money by their faith in new things, in projects that others rejected, and lands that others despised. The two universities they founded are much alike also, and would have been still more so if the educational ideals and purposes of the founders had been more closely followed out. Institutions do not seem to take after their parents as a rule.

In 1843 few people took stock in the alleged invention of a magneto telegraph by S. F. B. Morse. As the inventor was a college professor and, even worse, a sculptor, his machine could not be expected to work well, and it did not. But Mr. Cornell, being out of a job at the time and therefore open-minded, took up Professor Morse's scheme and invented a plow to lay the wires underground. The experiment was a failure, being an anachronism. For the next half century telegraph wires were to be strung on poles, so Mr. Cornell invented a method of stringing them on poles, all the way from Washington to Baltimore, and, to make a long story short, he was able, some twenty years later,

to back his endowment of the university with $500,000 of Western Union bonds, a good paying proposition.

He also dabbled in politics with considerable success. He was in the State Senate, chairman of the Committee on Agriculture when Andrew D. White was chairman of the Committee on Education, and it was the syzygy of these two men, the conjunction of these two ideas, that produced Cornell University. Education and agriculture had walked far apart since the days when the earth was young. Pagan, peasant, yokel, bumpkin, rustic, all the old names for countryman imply illiteracy and lack of culture. It was the object of the Morrill Act to change all this.

In previous chapters I have told how the land scrip endowment of the Morrill Act in other States was largely wasted through carelessness, fraud, necessity, or lack of foresight. But in New York the case was different, owing to the speculative genius of the founder. He bought the scrip when nobody else would take it, at thirty cents an acre, and located it in Wisconsin timber and Kansas farms, returning part of the money doubled or trebled before he died and leaving an investment which has so far brought to the university about five million dollars. But the university was for many years in the condition known to the early settlers in those States as "land poor." In 1881 it had fewer students than when it started; its buildings and equipment were deteriorating; its endowment was reduced; its debt and deficit were piling up.

Cornell is sometimes called a State university of the East. There is undeniably some resemblance to the State universities, but to one who comes to it after making the rounds of them, the differences are so much more striking that it does not seem like a State university at all, but rather like Yale, Harvard, or Pennsylvania. It has neither the good nor the bad qualities of the State university type. Curiously enough, the agricultural department, which is really

a State institution, has distinctly the atmosphere of the State university, in its social life, in its sense of responsibility toward the State as a whole, in its freedom and unconventionality, in the spirit of faculty and student body, something undefinable, but, it seems to me, quite perceptible. But the agricultural college is very different in its character from the university as a whole.

The deviation of Cornell from the State university type is the more remarkable when we consider the start it had in that direction. Both of its presidents during its formative period, Andrew D. White and Charles Kendall Adams, came to it from the mother of State universities, Michigan, and obviously took this as a model in several ways. The institution which Mr. Cornell thought he was founding was more like some of the State universities than the Cornell of to-day. It was his expressed intention that the instruction should be "on such terms as the limited means of the most humble could afford." And, again: —

"I hope we have made the beginning of an institution which will prove highly beneficial to the poor young men and the poor young women of our country."

His words, which form the motto on the seal of the university, "I would found an institution where any person can find instruction in any study," do not suit the modern Cornell any more than his style of wearing his beard, which is the reason why Cornell is dissatisfied with its seal. Some of the State universities, with their free tuition, their accommodating entrance requirements, their extension and correspondence courses, and the bureaus of universal information, make more of an attempt to live up to Ezra Cornell's impracticable ideal than the institution that bears his name. The State of New York thinks it cannot afford to do what is done by the poorest Western State — that is, offer a free collegiate education to every young man and woman within its borders.

Cornell performs the functions of a State university in giving free tuition to all students in the College of Agriculture, to all New York students in the College of Veterinary Medicine, and to 600 students in other departments selected on the basis of competitive examination by the State Commissioner of Education, one each year from each of the 150 assembly districts of the State. Other steps have been taken under the administration of President Schurman to make a closer connection between the State and the university. The last Legislature, for example, increased the public control by having five of the trustees appointed by the governor, instead of being elected by the board. Other representatives of the public having ex-officio positions on the board are the Governor, Lieutenant Governor, Speaker of the Assembly, the State Commissioner of Education, the Commissioner of Agriculture, the president of the State Agricultural Society, and a trustee elected by the State Grange. Fifteen trustees, elected by the board, ten by the alumni, the librarian of the Ithaca Public Library, the president of the university, and the eldest male descendant of Ezra Cornell, make up this curiously composite body, apparently an attempt to get the advantages of all known forms of governmental succession, having hereditary, democratic, scholastic, plutocratic, oligarchic, corporational, appointive, and elective members. Such a combination could not fail altogether. For the first time since 1895 there is no woman on the board of trustees.

Since the tendency in some Eastern institutions, in Cornell and Pennsylvania, possibly also Johns Hopkins, is to approximate the State universities in form and function, it will be interesting to observe them in the future to see if they also acquire more of the State university spirit, or whether this spirit is due merely to the fluidic conditions of a primitive and pioneer community and will disappear in the West when society becomes solidified and stratified.

Certainly it would be hard for a State university to thrive in the Eastern atmosphere of caste and exclusiveness, of wealth and family pride, of vocational predestination, and of the subordination and segregation of women. I do not mean to imply, of course, that the caste spirit is absent even in the newest and poorest of communities. I lived once in a mining town of five thousand inhabitants. It was only two years old and mostly composed of one-room log houses with tin-can roofs, but the ladies on Ohio Street, who had come the year before, refused to call on the ladies of Michigan Street, who had been there only six months. In the rawest of Western universities the "barb," even if a six footer, is below the "frat" man's line of sight. Social psychology not being under the laws of arithmetic, there is more difference between $250 and $500 a year in student expenses than between $1000 and $2000.

The most marked inferiority of the State universities has been and still is in graduate work. This may be roughly measured by their output of doctors.[1] There have been 3471 doctorates of philosophy and science conferred during the past twelve years, and of these only ten per cent are to be credited to the State universities. The universities considered in these articles have conferred four fifths of these degrees, the nine endowed institutions 2634 and the five State institutions 289. Contrary to the general impression the State universities are not so largely devoted to science as the others. The endowed universities gave 46 per cent of their doctorates for research in physical and natural science, while the State universities gave 40 per cent in these branches. The contrast in individual cases is more striking. The leading State university in graduate work is Wisconsin, which has 32 per cent of its doctorates in science, while Cornell, on the other hand, has 60 per cent in science.

[1] For these statistics see *Science*, Aug. 20, 1909.

The distribution of graduate students at Cornell is quite unusual. In most places the chemical department is far ahead of the others. More than twice as many men have gained the doctorate in chemistry as in any other subject.[1]

The chief reasons for this are that chemists have more opportunities for employment outside of educational work and that there is a better chance for successful research. It is known that in chemistry there are just as good fish in the sea as ever were caught. A man can throw in his line almost anywhere and hook an *Arbeit*, at least a little one, which with ordinary care and luck may be landed. Other departments, particularly the humanistic, cannot give promise of such sure reward for industry.

At Cornell the chemical department has always been a strong one, and was the leader in taking up earnestly the now dominant branch of physical chemistry. But in the number of advanced students two other departments have now passed it. According to the latest report of the president the leading departments had in 1907–1908 the following number of graduate students working for higher degrees:

Agriculture	44
Physics	42
Chemistry	35
Philosophy	21
Political Science	21
Mechanical engineering	21
Zoölogy	19
Botany	19

That is, Cornell has more students in the single graduate department of agriculture than some universities have either in their entire graduate schools or in their undergraduate colleges of agriculture. Of more significance than their

[1] The number of doctorates conferred in the leading sciences for the last twelve years is: Chemistry, 413; physics, 202; zoölogy, 190; mathematics, 197; botany, 153.

number is the high quality of the young men now being attracted to agricultural research. This is due, as I have said before, not so much to the practical demands of the industry or to the heavy subsidizing of such work by the government in the Adams and other experiment station funds, but rather to the new field of discovery which has suddenly been opened in this direction. One of the most interesting doctor's examinations that I attended in my rounds of the universities was one in Cornell on the methods of manufacture of new kinds of fruit. Even an outsider could catch something of the fascination there must be in the modeling of plants and animals according to a preëxistent concept. "Frankenstein" and "The Island of Dr. Moreau" employ clumsy and antiquated devices compared with the new tools of the creative biologist of to-day. Whatever may prove to be the validity of Mendelism as a law, it has demonstrated its value as a guide and stimulus to research in heredity. Students of ambition and ability seem to seek by a sort of instinct those fields which are to be for their generation the most profitable and those instructors who have a message for the future, often obeying this instinct in opposition to the prevailing college opinion and authority of the official leaders of thought. We see apparent instances of such teleological tropism in reading biographies of famous men and in watching the career of our students in school and after. A special providence seems to watch over the destinies of students, of some students, and guide them safely through the chaos of the elective system. But this may be a superstition of mine, induced by the feeling that a special providence is more needed in the elective system than elsewhere.

The department of physics at Cornell has an exceptional record for productivity, both of papers and professors. This is due to the fact that Professor Nichols, who has been at the head of it for over twenty years, is not only a zealous

investigator, but has the rarer ability of being able to impart his zeal to others. The new building, the gift of John D. Rockefeller, is worthy of especial attention from other institutions because of its commodious and convenient arrangement. It was obviously designed from the inside. Professor Nichols apparently had something to say about how it should be constructed, as well as Carrère and Hastings. Its only claim to beauty is, however, that based on the proverb "handsome is that handsome does." Here are handled, I believe, a larger number of students, elementary and advanced, than in any other physical laboratory in America, and yet with an unusual amount of personal attention and opportunity for individual work.



THE NUMBER OF STUDENTS IN CORNELL UNIVERSITY, 1888–1908.

The visitor who climbs to the top story of the old Morrill building will find an interesting department, the psychological laboratory, occupying a desultory series of twenty-six rooms. Philosophy at Cornell is especially favored by hav-



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GOLDWIN SMITH HALL.

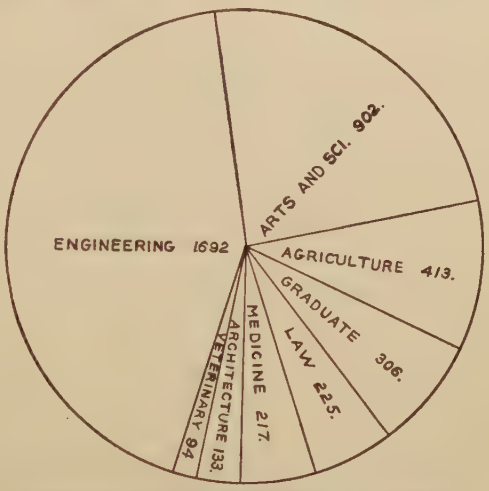
The College of Arts and Sciences.



Cornell University.

THE NEW BUILDINGS OF THE NEW YORK COLLEGE OF AGRICULTURE.

ing a separate endowment of its own, the gift of the late Henry W. Sage, chairman of the board of trustees from 1875 to 1897. At the time when the school was founded, some twenty years ago, there was a prevalent impression, at least among those of us who were young, enthusiastic, and inexperienced, that there was some sort of a philosophical millennium soon to come about, an era of good feeling, when physician and metaphysician should fall on each other's necks; when Platonist and Aristotelian should understand one another's tongue; when psychologist and physiologist should see both sides of the shield; when all should join hands and rally round the kymograph and a little child should lead them. My language is a little confused, but all the better represents our state of mind at that time. It seems long ago when I think of it, for the millennium has been indefinitely postponed, as all millenniums have to be, and probably the vision that inspired us has faded from the sight of the younger generation. Anyway, there seems to be at Cornell no such concentration of forces on the problem of the mind as we once hoped for. The departments have all grown, but not grown together. They are scattered topographically and logically. Professor Titchener's machines spin freely in Morrill Hall, grinding out papers for the *American Journal of Psychology*, but over in Goldwin



DISTRIBUTION OF STUDENTS AT CORNELL UNIVERSITY, 1908–1909.

Smith Hall, Plato and Kant and Thomas Aquinas pursue the even tenor of their way undisturbed by this machinery. Professor Burt G. Wilder has a unique collection of 1600 brains in McGraw Hall, but what have they to do with the living brains of the children that are being experimented upon in the educational department? I do not mean to find fault with Cornell for failing to do what is done nowhere, but I merely note the fact that even the centripetal force of a special endowment has not succeeded in founding a school of philosophy, in the traditional sense of the term; it has merely brought to one place a number of philosophical students.

Notwithstanding the preponderance of scientific students at Cornell, greater than in any other of these universities, the true university spirit has shown in the preservation of the balance of power. The minor departments have been overshadowed, but not stunted. They have kept their work at as high a grade as the same departments in institutions where they are in the lead. To take an example from the extreme right wing of the faculty, the Greek department last commencement turned out three doctors. This is a small number, but a large proportion, for the total number of Ph.D.'s granted in Greek was only eleven. Now the same year there were thirty-nine doctorates conferred in chemistry in the United States, of which Cornell is credited with six, only Yale, with seven, being above it. That is, Cornell had this year a higher relative standing among the universities of the country in Greek than in chemistry. It must, however, be noted that this was an exceptionally good season for Greek at Cornell.

The periodicals of the university are a series of *Studies in Classical Philology*, *Islandica*, the latter devoted to the exposition of the unique collection of 9000 volumes on Iceland, *Studies in History and Political Science*, *The Philosophical Review*, *The Physical Review*, *The Journal of Physical*

Chemistry, The Cornell Civil Engineer, The Sibley Journal, The Cornell Countryman, and the publications of the agricultural, medical, and veterinary schools.

Those who fear the extinction of "the college" through the encroachments of the professional schools should study the situation at Cornell, where they will find much of interest and not a little of encouragement. Here, where the technical departments predominate more than elsewhere, humanistic studies, both in their ordinary and in their more recondite forms, have thriven from the beginning. At the present time the College of Arts and Science is growing more rapidly than the technical schools, and for the last few years has been the subject of special consideration by the president and faculty. In some institutions the early demise of the old college seems to be accepted as a foregone conclusion, and the quiet of the deathbed is disturbed by squabbles over its estate. In Cornell it is recognized that the difficulty with the college of arts is not the strength of its new competitors, but the lack of a clearly defined and generally accepted idea of its own purpose. As Professor Willcox put it: "The most vital need of college education throughout America is the formulation and application of some definition of a liberal education which will apply to the new conditions." The chief tangible results of the prolonged and active discussion of this question at Cornell have been the housing of the humanities in Goldwin Smith Hall and the creation of the Administrative Board in Charge of Freshmen and Sophomores. The intangible results, such as the clarifying of ideas and the development of a spirit of unity and self-consciousness in the college of arts, are doubtless more important.

The new building devoted to the Arts departments has been placed in the center of the campus, and stretches 384 feet north and south. Its architecture has been admired and criticized with equal warmth. It is, at any rate,

dignified and imposing in appearance, and commodious in arrangement. It was fittingly named for the scholar and statesman who, coming forty years ago, from the oldest of English universities, endowed this new one with something of its ideals of culture and service to the State. On either side of the entrance are long and lofty halls containing a larger collection of casts of Greek and Roman sculpture than any other university possesses. Most of the work in literature, philosophy, education, history, and political science is done in this building, which is in direct charge of the dean of the College of Arts and Sciences. Here are numerous seminary, study, office, and consultation rooms for students and professors, and a reference library. I might mention here that the habit of home reading by the students has been very greatly increased by the simple expedient of setting apart a room in the library building for a circulating collection of 3500 volumes on open shelves. Last year each volume of this library was, on the average, drawn twice for home use and read twice in the room.

Placing the Freshmen and Sophomores in charge of what is practically a special faculty composed of the professors under whom most of their work is done, is a recognition of the fact which President White was the first to discern and President Harper to put into effect, that here is the true line of cleavage in the college. The Cornell committee in initiating this movement stated the point very succinctly as follows: —

"Among the best of our colleges and universities the great break in the course of a collegiate or liberal education comes at the end of the second year, both as regards the curriculum and the methods of instruction. This differentiation of the work, methods of instruction, and educational aims of the first two years of the course in the College of Arts and Sciences in contrast with those of the later years of that course calls for a corresponding differentiation in the staff of instruction, which could not fail to insure greater thoroughness of instruction, greater simplicity and effectiveness of adminis-

tration, and closer personal and social intercourse between teachers and students."

How far this idea will be carried I do not know. There is at present strong opposition at Cornell against facilitating the entrance of students with advanced standing, or even granting degrees for less than four years of work in residence. In this, as in several other respects, the policy of Cornell is opposite to that of Columbia.

The efforts of the President have for some time been directed toward having all the technical and professional schools put on the basis of two years or more of collegiate work. The Cornell Medical College in New York City has been made a strictly graduate institution, requiring a college degree covering a minimum of a year's work in each of chemistry, physics, and biology. This accounts for the falling off in enrollment of this college. The faculty of law have adopted the requirement of a year of arts work for admission. But the engineering faculties have not been induced to go farther in this direction than to authorize as an alternative to their established four-year course, a five-year course containing extra work in the humanities, the same expedient as has been adopted in the University of California.

This question of entrance requirements is now one of the most puzzling problems of American education. They have been raised so rapidly of late that it is fair to ask if the optimum limit has not been reached or even in some institutions surpassed. The universities have always been inclined to take — and waste — too much time. Seven or eight years of a young man's life is a large amount to spend in non-productive labors preparatory to his career. It was doubtless a good plan for Cornell to make its medical school strictly graduate. It does not follow that all other medical schools and the Cornell engineering schools should follow this example or feel ashamed of themselves because they do

not. At least it might be well to wait awhile to see what sort of men are turned out by the new graduate engineering schools established at Harvard. It cannot be decided on theory alone. Harvard says you cannot make a scholar without four years of collegiate work before the engineering course begins. Cornell retorts that you cannot make an engineer without four years of strictly engineering work.

The engineering authorities at Cornell are rather set in their ways. This is natural, because their ways are good and have been tested by long experience. A degree in engineering from Cornell is as good as gold. It passes current all the world over at the highest rate of exchange. Every effort has been devoted to making the four years' undergraduate course thorough and efficient, and there has been no time for fads and fancies. It is, however, customary to criticize those who are doing something well on the ground that they are not doing something else; so in accordance with that custom I would call attention to the fact that Cornell undertakes no shop courses, correspondence work, mechanics' institutes, or evening classes; prefers not to devote much of the students' time to acquiring manual dexterity or to making their own machinery; does not believe in a minute specialization and the differentiation of undergraduate courses; has no system of industrial fellowships like Kansas or of alternating shop work and study like Cincinnati; and supports no engineering experiment station like Illinois. Whether these be virtues or deficiencies must be left to those who know more about it than I. But I will venture the opinion that the addition of a strong and well-endowed department of research in applied science would be of benefit to Cornell as well as to the country. This would be in accordance with the Cornell spirit, at least the old Cornell spirit. The people there told me of the setting up of the first dynamo in America and the illumination of the campus by arc lights, and in the Sibley museum

I was shown many historic machines, early turbines and gas engines, typesetting machines, and telegraph instruments, but I could not find what I most wanted to see, that is, inventions bearing the same relation to the future that these old dynamos and turbines do to the present. Perhaps they had them, but were afraid I would steal the patents. Research in pure science is no longer discovery; it is invention. Most of the compounds used by the chemist, most of the electric waves used by the physicist, are not found in nature. It may come to be the same in botany and zoölogy. In research in pure science the universities have led during the last half century, giving their discoveries freely to the world. Is it not possible that the same method, that is, experimentation by public institutions for the benefit of the people as a whole instead of by private persons for their own profit, would result in greater progress and public advantage also in the applied sciences? As it is, the universities are generally content to follow the shops and often content to follow at a long distance. The average technical professor thinks he is doing pretty well if he can describe to his students the manufacturing processes employed to-day or even a few years back, without attempting to forecast or control the future. Yet even the purely educational function of a university would be more efficiently performed if students were prepared not merely for existing professions, but for those which are to be opened. In agriculture, which, as I have said, is the most enterprising branch of American education, this has been done. Several universities began to educate foresters long before there was any demand for their services. Cornell was one of the first in this field, but has abandoned it now, when Columbia, Harvard, and Yale are actively entering it. This year Cornell has established a course of training in professional limnology. Now, it cannot be said that there has been so far any public clamor for limnologists, but I am willing to believe that

there may be a place for them, and the profession is certainly not overcrowded like the others.

I will, as usual, be specific in my suggestion, even at the risk of being absurd. Why did not Cornell University in 1901 offer a research professorship in aviation to Wilbur Wright of Dayton, Ohio? It was at that time apparent even to a layman that the problem of aëroplane flight had been brought within the range of practicality [1] and that he was exceptionally well fitted to promote it. Mr. Wright was recently offered a professorship of that kind by the University of Paris, which has received donations amounting to $240,000 for aëronautical research and instruction. He refused it on the ground that it was easier to fly than to speak French. This objection would not have applied to Cornell, and it is probable that at a time when he was mending bicycles for a living and getting the necessary mathematics from his schoolma'am sister, he would have accepted the chair. If he had, and if he had not gone to sleep in it, the progress of aviation would have been smoother and more rapid; the Wright patents would be public property; America would have had an undisputed lead; and a half dozen Cornell graduates would have known more about flying machines than the rest of the world or than anybody knows now. As it is, if any of the Cornell boys want to learn the science of flight they must either go to the universities of Paris, Berlin, or St. Petersburg for instruction, or else learn it, as the Wright brothers did, in the University of Hard Knocks.[2] Of course Cornell and the other leading, I should

[1] His paper presented to the Western Society of Engineers, September 18, 1901, published in the *Journal* of December, and reprinted in the Report of the Smithsonian Institution, 1902, for free distribution to the public, contained both the theoretical and experimental demonstration of this. In fact, it is remarkable how little has been added to what is contained in that article by the eight years of active investigation since.

[2] This institution, although one of the great American Universities, is not included in this book.

say foremost, American universities will, in time, have to give some training in this branch of applied science, and they may in time catch up with the universities of Continental Europe, but it would have been cheaper and more profitable to have got in on the ground floor.[1]

The reason why I am applying this to Cornell instead of to equally delinquent universities is because we expect more of Cornell. Cornell, in order to be conservative in the sense of being true to its traditions, must be radical and progressive, for that is the way it started. I do not mean to say that Cornell compares unfavorably with other universities in this respect, but does it not compare unfavorably with its former self? Is the university as conspicuous an educational innovator in any of its departments as it was a generation ago? Yet one would have to be very much of a conservative to maintain that educational innovation is not now as much in order as it was then. I realize and wish to make plain that Cornell is in a vigorous and healthy condition, is growing rapidly, is improving all the time, and developing in many new directions, but somehow I get the impression that it is now in its forties beginning to settle down, and I do not like to have Cornell settle down.

One indication of approaching maturity is perhaps the tendency toward conformity. The old Cornell, or rather the young Cornell, prided itself on being very different from the other Eastern universities. Now I fancy there is a desire to be as much like them as possible. Among other things, there is developing a spirit of caste and exclusiveness from which the Cornell of earlier days was largely free.

[1] A Cornell correspondent to whom I am indebted for a careful criticism of this chapter informs me that the Sibley College of Mechanical Engineering is now ready to announce a regular course in "Aërial Engineering," and that Cornell, "far from settling down, is to study how to soar." But he adds, with what seems to me superfluous cruelty, that the plans for the course were already under discussion before my article appeared.

This is usually laid to the fraternities, but not altogether justly, for, although they manifest it most conspicuously, it is due to more fundamental causes. It is to be found in institutions like Pennsylvania and Yale, where the fraternity influence is not so great, and is still more evident in Princeton, where there are no fraternities, while in the State universities, where fraternities are strong, it is not yet so perceptible. It is not purely a social exclusiveness, as is commonly supposed, but takes the form in the universities of an intellectual illiberality, even of an aversion to the greater diffusion of knowledge.

There was in my time — in dealing with college students I am forced to acknowledge that I belong to another generation — a very decided propagandist impulse, a desire to spread our new ideas as widely as possible, to preach to the world the revelation of science which had been vouchsafed to us, to open the doors of the university to everybody. I can see now that this was a sort of priggishness, but it was an altruistic priggishness, which is a mitigating circumstance. The spirit was much like that which drove hundreds of young Russian students of both sexes to abandon homes and career to "go out among the people," though devoid of their revolutionary and political aim. This was the era of the rise of the Chautauqua movement, of university extension, when Proctor and Tyndall and Huxley were giving popular expositions of the latest science in language hitherto unprecedented and since unequaled for clearness and force, and in almost every college there were professors imitating them according to their ability.

Now it seems to me, in spite of the popularization being carried on in some directions, that this missionary zeal has very largely disappeared from both professors and students. Why I do not know; perhaps because they have lost faith in the all-sufficiency of knowledge, perhaps they are disap-

pointed in the educability of the masses, but more, I believe, because the caste or guild spirit has developed. Our modern industrial professions are assuming the arrogance of the old clerical professions. As education has become more vocational, the trades union idea has come in. An engineer who has invested $5000 or $10,000 in an education as a capital for his life work does not want to give away his information. He is opposed to short cuts to knowledge and in favor of the limitation of apprentices. Raising fees and admission requirements is now not always looked upon as a disagreeable necessity, but rather welcomed as a good thing because it "keeps out the muckers."

Concomitant with the growth of this professional spirit comes a contempt for the nonprofessional students of the old college. In Yale, where the college and the scientific school have been kept separate, we have the most amusing spectacle of the two sets of students trying to look down on each other, one from the vantage ground of the time-honored course, the other uplifted by the consciousness of being more practical. So far as I could find out, neither party is having much success in making the other realize that it is being looked down upon.

Women, as the weaker and more submissive sex, forming the majority of those who stick to purely cultural courses, get a large share of this contempt, and when they enter the professional departments, are in some places met with a cold shoulder. One way out of it I have previously suggested — the development of vocational courses for women, in which they can take a professional pride. But women have always been used to being treated with contempt, and if they don't get anything worse, they have reason to think themselves fortunate.

After long consideration of the subject I have come to the conclusion that the disposition to discriminate against women which is shown by most Eastern institutions is due

rather to these two motives — the caste spirit and the guild spirit, social and professional exclusiveness — than to any anti-feminist ideas or instincts. This can be clearly seen at Cornell, because here the two motives coincide, since, by a curious reversal of status, the engineering schools have become fashionable and aristocratic. The sons of rich manufacturers of New York and Pennsylvania, for example, are apt to be sent to Cornell for an engineering course, while girls who have to support themselves by teaching are likely to go in for the liberal arts, so called because they are the arts that are liberal enough to give them a living. Consequently we have the spectacle of young men sitting on the porch of a luxurious fraternity house and criticizing certain passing "coeds" with an acridity almost feminine, expressing disgust because their clothes do not fit them and their hands are not neatly manicured. The criticism, although unjustifiable, might not be unfounded. It might happen that the girl under scrutiny had not shown artistic genius or even creditable craftsmanship in the dress she had made herself, and that her hands were the worse for wear, for she, unlike her aristocratic critic, had slaved and saved for years to get an opportunity for the education which he obtains without sacrifice, and of which he would, if he had his way, rob her.

The class of young men who object to the presence of the young women is, however, small at Cornell; smaller than in the other Eastern universities, though larger than in the Western. But as they are leaders in the fraternities, which here, as everywhere, dominate the society life of the university, they make themselves unpleasantly conspicuous at times. One episode will have to be mentioned, although it is rather sickening, for it is a part of Cornell's social history. The leader of the Sophomore cotillion not long ago asked a university girl, his fiancée, to take part in that function with him. His associates thought this an undue recognition



THE CAMPUS, CORNELL UNIVERSITY.

of the existence of the "coeds" and prevailed upon him to break or get released from his engagement — the dance engagement — and take an outside girl instead.

The incident was unfortunate, because it caused some natural resentment even among those who were far from aspiring to the honor of leading a Sophomore cotillion, and more because it misrepresented the spirit of Cornell young men as a whole. They are not as a rule unfair or even ungallant toward their feminine colleagues. For example, when Miss Cook won the Woodford, a prize in oratory which has always been highly esteemed, it called out admiration rather than resentment. She also secured a position on the debating team, and when the Columbia boys objected to her appearance on the platform as one of their opponents, there was no thought of yielding on the part of Cornell. Such an incident, in my opinion, outweighs a hundred cotillions, though perhaps not all young ladies will agree with me. The enthusiastic advocates of coeducation in Cornell probably equal in number the bitter opponents. Some of the finest young men in the university have chosen Cornell in preference to Princeton or Yale partly because they believed in coeducation. The great majority of the students are altogether indifferent on the subject, and it is not to be regarded as a serious question.

The statement that at Cornell the young women are ostracized is a pure fiction, which a perusal of the list of married alumnæ would promptly refute. Two hundred callers on a Sunday afternoon is not an unusual number for Sage College, the principal woman's dormitory, almost one apiece, although I presume they are not evenly distributed. At any rate, it does not look like ostracism. On the whole, I think the women in Cornell get as much masculine attention as is good for them, and I know that some of them get more than they desire. As for "social recognition," that is, something which the "coeds" may hope for, but cannot

rightfully demand. In the State universities they get altogether too much "social recognition."

Within a few years of the opening of Cornell the question of the admission of women came up. A committee, of which Andrew D. White was chairman, gave it careful consideration. They first wrote to theorists, and their replies were mostly unfavorable. They then visited institutions where coeducation was in vogue, and found that their experience was mostly favorable. They fortunately decided to give greater weight to experiment than to opinion. So coeducation was adopted and Sage College was founded, not an independent college like Radcliffe or Barnard, but a residential hall.

But Sage has kept a secret. The founder of the university was in favor of equality, but he had his misgivings. He wrote them in a letter and put it in the cornerstone. He did not think it would fail, but if it did he knew why it would, and he wanted posterity to know that he knew it. I wonder if any of the Sage girls have been kept awake by curiosity to know what is in that letter. I have. What was the weak point which the shrewd old man suspected in its foundations? The chances are that it is something that the experience of a quarter century of feminine education has proved quite illusory, like most of the fears and not a few of the hopes enumerated in that curious old pamphlet, the Report of the Committee on Mr. Sage's Proposal to Endow a College for Women, 1872. One of the benefits which President White looked for as a result of the higher education of women, the reformation of feminine costume, is so far from having been attained that I must give his own words: —

"Among the curiosities of recent civilization perhaps the most absurd is the vast tax laid upon all nations at a whim of a knot of the least respectable women in the most debauched capital in the world. . . . Young men in vast numbers, especially in our cities

and large towns, are harnessed to work as otherwise they would not be; their best aspirations thwarted, their noblest ambitions sacrificed, to enable the partners of their joys and sorrows to vie with each other in reproducing the last grotesque absurdity issued from the precincts of Notre Dame de Lorette, or to satisfy other caprices not less ignoble. The main hope for the abatement of this nuisance, which is fast assuming the proportions of a curse, is not in any church, for, despite the pleadings of the most devoted pastors, the church edifices are the chosen theaters of this display; it would seem rather to be the infusion, by a more worthy education, of ideas which would enable women to wield religion, morality, and common sense against this burdensome perversion of her love for the beautiful. This would not be to lower the sense of beauty and appropriateness in costume; thereby would come an esthetic sense which would lift our best women into a sphere of beauty where the Parisian grotesque would not be tolerated; thereby, too, would come, if at all, the strength of character which would cause woman to cultivate her own taste for simple beauty in form and color, and to rely on that, rather than on the latest whim of any foolish woman who happens to be not yet driven out of the Tuilleries or the Bréda quarter."

I refer to the debating societies of Sage College the question why educated women as a class have in this particular completely failed to justify the confidence which President White placed in them. So far as the masculine eye can discern, there has been no improvement of feminine dress in the direction of economy, taste, or hygiene, and college women, whether rich or poor, do not seem to show any more independence of fashion or originality in esthetics than their unlettered sisters. The year 1872, when these words were written, was, if I remember right, the era of the pullback and the polonaise, immediately succeeding the fall of the crinoline. We have seen worse things since, and the financial burden which was then "fast assuming the conditions of a curse," has enormously increased. We cannot to-day share President White's hope for relief through the women's colleges, for the elevation of the standard of taste in general, if such elevation has been

accomplished, has not shown itself in the realm of costume. Even the specific training in this department which has been recently introduced seems inclined to intensify the evil rather than to remedy it. It is impossible yet to say what may be done in Cornell, because the work in the domestic arts is barely begun there, but in Teachers College, of Columbia University, there is a thriving department. I visited the exhibition of the best work of the advanced students last commencement, and I must say that I saw there more grotesque, ugly, and ungainly hats than I have ever seen at large on the streets of New York. And the women who designed them were to be sent out through the country as teachers of domestic art! But is it not possible that all critics of women's costume from Isaiah to White, have misdirected their attack? May it not be that the reason for the failure of dress reform movements lies in the fact that extravagance and bad taste displayed by women are not, after all, feminine but masculine vices?

There are no sorority houses at Cornell. This is strange, for in some Western universities these are almost as many as fraternity houses. One reason, doubtless, is that the comparatively small number of women at Cornell are mostly taken care of at the residence halls, Sage College, and its annex, Sage Cottage, on the campus, besides the unofficial Alumnæ House near by.

No provision at all is made for the boarding of the men, and there is no general clubhouse, like the Harvard Union, or Houston Hall in Pennsylvania. Consequently the fraternity system is more highly developed at Cornell than anywhere else. There are thirty-five fraternity houses, some of them very large and elegantly furnished. The earlier ones were given sites upon the campus and command beautiful views. Students not in fraternities are scattered about the city in private residences and small boarding houses. There is only one large private dormitory of the

kind common in Cambridge and New Haven. The necessity of keeping up so many expensive chapter houses makes the competition for desirable recruits very keen. The rushing campaign is short, sharp, and decisive, and is strictly regulated in all details by pan-Hellenic rules. This quick work is said to have the advantage of keeping the fraternities more even in strength than where students are elected on longer acquaintance. Besides the house fraternities there are innumerable other secret societies of all sorts and purposes, and the stranger is very strongly impressed with the scholarship of the Cornell undergraduate by seeing on his cap or pin inscriptions in Greek, Hebrew, Arabic, Assyrian, Sanskrit, or Egyptian characters. At Cornell the scientific honorary society, the Sigma Xi, is more highly esteemed than its venerable rival on the literary side, the Phi Beta Kappa. Phi Beta Kappas are in fact not so popular as the Kappa Beta Phis, a group of young men whose ideals and mode of life are quite the reverse of those of the former society.

At the end of the first term there is apt to be room in the fraternity houses. Some are not merely desolated but emptied when the "bust notices" are issued from the registrar's office. Cornell has a reputation for hard work to maintain, and idlers are weeded out without hesitation or qualms. The Cornellian will not allow that any other institution can be compared with his in the amount of work required, except perhaps the Massachusetts Institute of Technology. Students are admitted on certificate, and the credit of the accredited schools depends on the record of their graduates. The list is frequently revised, and schools are added, dropped, warned, advised, and reprimanded, according as their output keeps up to sample. As seems to be everywhere the case, the public high schools turn out better students than the private schools. A committee which investigated this question in 1905–1906 found that

58 per cent of the students came from public and 42 per cent from private schools. Of the students from the public schools, 3 per cent were dropped at the end of the first term; of the students from the private schools, 7 per cent. After the first term, 9 per cent of the public school students were warned, and 15 per cent of the private school students. Consequently, the committee recommended that the certificate privilege be withdrawn from all the private schools.[1]

I presume that there is more good work done at Cornell than ever before, and probably there are as many self-supporting students as in the days when it was known as the "poor man's college." But of late another class has come in which has quite overshadowed them and given the institution a very different reputation in the country at large from what it used to have. Twenty-five years ago President White stated that: —

"Neither the attention of the faculty nor my own attention, has been called during the entire year thus far to any offense of any sort, for which any faculty in the land would deem it necessary even to reprimand any student."

President Schurman could not now say the same. In fact, he has said things very different.

Referring also to those Edenic days of 1884, Mr. J. F. Gluck, one of the Alumni trustees, testifies to "the total absence of a dissipated and boisterous class, or even of a jovial and happy crowd." If we accept this statement

[1] A partial explanation of the inferiority of the private schools may be found in the report of Prof. Edward L. Thorndike, published as Bull. No. 404, U. S. Bureau of Education. He found that the public high schools paid their men teachers 15 per cent more and their women teachers 30 per cent more than the private high schools; also that the public school teachers had, as a rule, longer and more thorough training. Another interesting point he brings out may be mentioned here, although it has nothing to do with the subject, that is, that the men teachers have, on the average, had less training and very little more experience than the women teachers.

we must agree with him when he says further that the "conduct of the students for uniform excellence is probably without a parallel in the history of American colleges." But if he had been with me in the Dutch Kitchen the night after Cornell had beaten Harvard on the lake, he would have seen a crowd which without exaggeration could be called "jovial and happy."

The university authorities have made special efforts during the last few years to suppress student disorders. The Sophomore-Freshmen conflicts have been ameliorated and the Senior banquet, which had degenerated into an official spree, has been sobered up. In his opening address of 1908 President Schurman announced that "any man who gets drunk, if the authorities of the university can ascertain the fact, will be dismissed from the university." This has doubtless had a good effect, although the authorities of the university have not ascertained so many such facts as the police courts or the public.

In the promotion of these reform movements the student body has not taken an active part. There is no system of student self-government now in force at Cornell, and the undergraduate officials have not always been truly representative of the great mass of the students. The honor system of examinations has been adopted in the colleges of law, of civil engineering and agriculture, but not in arts and mechanical engineering. The students tell me there is about the same amount of cheating under one system as the other, but the evil is not serious in Cornell anywhere. I do not think the *morale* of Cornell in any respect is inferior to great universities in general, but the student body seems to be unfortunate in its leadership. Its chief efforts at the time of my visit were directed toward preventing the faculty from cutting out the week's recess devoted to athletics in order to extend the working season, which is short at Cornell.

The summer vacation is utilized by a large proportion

of the technical students to get practical experience, and there is a summer session of six weeks, in which, however, the work is almost entirely confined to the college of arts, for the engineering departments so far are not inclined to take advantage of it. In fact, the university has from the first adopted a somewhat stepmotherly attitude toward the summer school, and is not yet ready to accord it full recognition. Instead of offering special opportunities for graduate work, as Chicago and Columbia do, and encouraging undergraduate students to enter it, as Harvard does, Cornell is reluctant to permit work to be done in summer for advanced degrees or for shortening the undergraduate course. In spite of the hesitancy, if not hostility, manifested by the faculty toward the summer session, it has grown and prospered amazingly, doubling in numbers in the last five years and improving greatly in quality. It offers an educational opportunity that should be eagerly embraced, for Cornell is exceptionally favored by its location. The country, especially such a country as surrounds Ithaca, has attractions which will rival those of a large city, in the opinion of many summer students, and the climate is better than in New York or Chicago. There could be no better way of making known to all parts of the country the advantages of Cornell for advanced work than by developing a large summer session of high standing.

The geographical distribution of Cornell's *clientèle* is shown by the following figures. During the past twenty-one years 2045 graduates have been admitted to graduate work from 236 institutions, of which the most prominent are: —

Cornell	870
Indiana	52
Michigan	32
Ohio State	32
Smith	25

Toronto	24
Dalhousie	23
Harvard	21
California	20

There has always been an unusually large foreign contingent at Cornell, attracted chiefly by its reputation in engineering. In 1908–9 Cornell had 74 students from Latin America, including 9 from Cuba and 12 from Argentina. There were 50 Asiatics, 33 from China and 10 from Japan. The Cosmopolitan Club of Cornell, composed of foreign and American students, is one of the oldest and most flourishing of these organizations. It maintains clubrooms and is planning to erect a large residential clubhouse near the campus. The presence of these young men from all parts of the world tends, like the hilltop site of the university, to widen the horizon of the Cornellian.

Architecturally, the Cornell campus makes a pleasing impression on the visitor, notwithstanding that it is without systematic arrangement or consistency. This is because the buildings are so picturesquely placed and are scattered over such a large area that they do not come into conflict. One of the reasons why Cornell differs from the State universities is because it has from the start given recognition to the esthetic element in education, instead of having to graft this on after years of crude utilitarianism. Symbolic of this, the McGraw chimes rang out at the dedication of the university in 1868. The Sage chapel and memorial apse are decorated in painting and mosaic with a lavishness unwonted in America.

Both Director Smith, of the College of Mechanical Engineering, and Director Bailey, of the College of Agriculture, have so far forgotten what is expected of men in their position as to write poetry, and publish it, too. Poetry is allowed to creep into the bulletins of the Agricultural Department, also decorations and pretty pictures, even funny

ones. Liberty Hyde Bailey has a twinkle in his eye; you can see it even in print. He is distinguished among the directors of experiment stations by his discovery that a man could be scientific without being solemn, and that bulletins intended for the people could be made readable without detracting from their value. The students and professors over in the agricultural building believe in art, and, what is more, they practice it, the art of presentation in all its forms — writing, drawing, painting, and oratory. The young men who go out with the educational train make as many speeches in a day as a presidential candidate swinging around the circle, and they are harder speeches to make, for it is easier to persuade a crowd of farmers that you know more than they do about politics than that you know more than they do about farming. The propaganda spirit, which it seems to me has declined in general, is more active than ever in agriculture. The young men and women go out from the Cornell college of agriculture with something of the zeal of missionaries, spreading the gospel of applied science and applied art and the love of nature in her various forms. Five series of publications are issued from Cornell for the education of the people of New York State: the bulletins of the experiment station with the results of investigations, the Home Nature Study Course, the Rural School Leaflets for both teachers and pupils, the Farmers' Reading Course, and the Farmers' Wives' Reading Course; all of them attractively printed, illustrated, and well written. Here is nothing of the professional or trades-union tendency to monopolize knowledge. Perhaps it is because Professor Bailey insists that the college of agriculture is not a technical institution, training for a single profession. He is trying to give "a liberal education in terms of country life."

"All civilization develops out of industries and occupations; and so it comes that agriculture is properly a civilization rather

than a congeries of crafts. The colleges of agriculture represent this civilization, in its material, business, and human relations. Therefore, they are not class institutions, representing merely trades and occupations. The task before the colleges of agriculture is nothing less than to direct and to aid in developing the entire rural civilization."

Such an ambition is a worthy expression of the true Cornell spirit.

THE STUDENTS ENROLLED IN CORNELL UNIVERSITY, 1888-1910.

Years	Graduate	Arts and Sciences	Agriculture	Mechanical Engineering	Civil Engineering	Architecture	Law	Veterinary	Forestry	Medical	Total Regular Students[1]	Summer Session	Winter Veterinary and Agriculture	Total Receiving Instruction[2]
1888–89	69	526	58	294	128	69	85	—	—	—	1229	—	—	1229
1889–90	70	526	49	382	135	62	105	—	—	—	1329	—	—	1329
1890–91	84	499	52	444	137	52	122	—	—	—	1390	—	—	1390
1891–92	133	530	41	504	139	68	123	—	—	—	1538	132	—	1670
1892–93	170	534	48	563	131	78	176	—	—	—	1700	183	—	1883
1893–94	240	529	45	582	120	97	197	—	—	—	1810	296	61	2167
1894–95	185	559	45	510	123	76	191	—	—	—	1689	283	77	2049
1895–96	145	606	51	504	122	67	207	—	—	—	1702	255	83	2040
1896–97	161	638	68	488	152	51	239	11	—	—	1808	210	60	2078
1897–98	166	624	84	467	179	53	246	16	—	—	1835	223	93	2151
1898–99	190	631	85	501	185	48	164	23	7	278	2101	453	89	2643
1899–00	174	680	88	571	203	43	178	30	20	333	2299	495	83	2877
1900–01	205	755	99	661	183	52	182	42	23	347	2521	501	105	3127
1901–02	189	831	92	792	214	50	198	51	44	433	2845	604	104	3553
1902–03	201	795	114	891	252	53	224	64	70	396	3022	503	124	3649
1903–04	197	734	142	964	326	65	240	86	—	371	3091	744	135	3970
1904–05	211	684	189	1060	385	68	228	110	—	406	3318	619	199	4136
1905–06	232	705	230	1096	425	81	222	88	—	394	3461	642	248	4351
1906–07	239	748	278	1081	466	82	211	86	—	348	3523	755	244	4522
1907–08	249	820	348	1127	511	100	206	82	—	320	3734	841	270	4845
1908–09	310	902	413	1162	569	133	225	94	—	221	3985	889	354	5238
1909–10[3]	253	953	507	1169	555	139	260	99	—	182	4103	889	371	5363

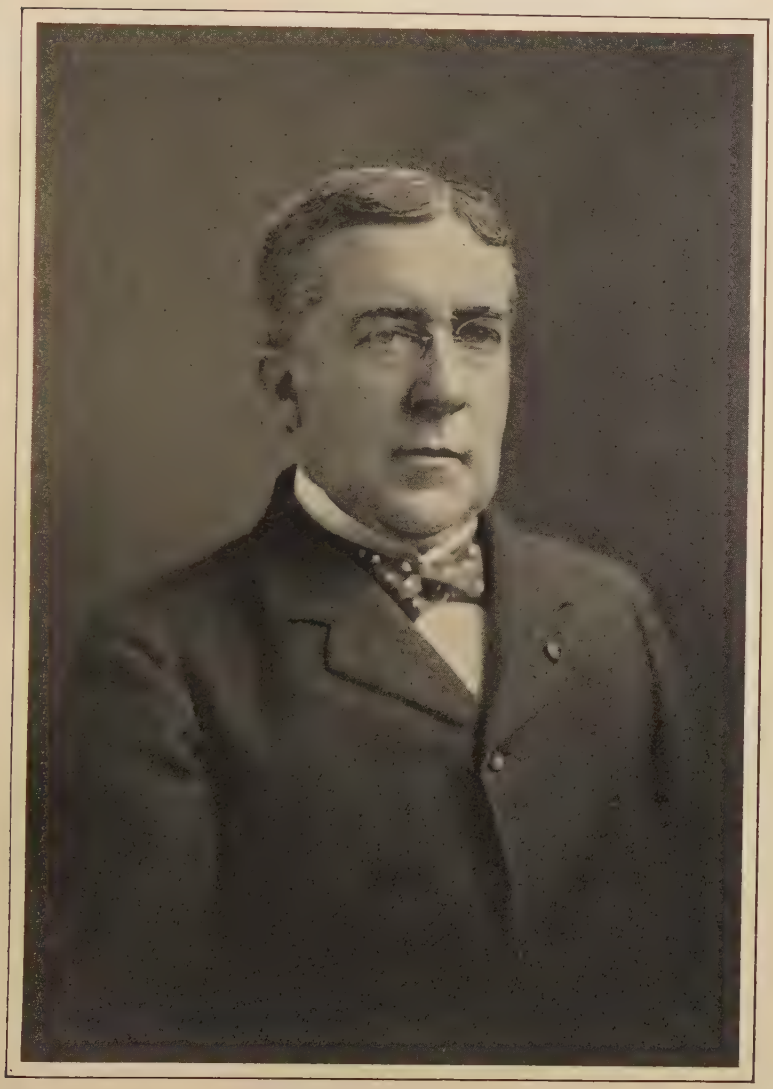
[1] Duplicates deducted.
[2] Includes duplicated names of regular students taking summer work, ranging from 101 in 1906 to 372 in 1908.
[3] Fall registration only.

CHAPTER XI

UNIVERSITY OF PENNSYLVANIA

THE University of Pennsylvania is a baffling subject to me. Of all the other universities I visited I got, by the end of a week, an impression of the character of the institution as a whole which, however erroneous it may have been and inadequately conveyed to the reader, was, nevertheless, tolerably clear and definite in my own mind. If I had stayed another week in a university it would doubtless have become hazy and confused, and if I had stayed a month or more, I should have known so much about it that I would not have had the courage to formulate any conclusions whatever. My film would have been fogged by over-exposure. But for the University of Pennsylvania the week was not the proper time. I could not get it focused. I came away with the feeling that I had not seen the university, I had only seen some of the buildings and some of the faculty and students. I had discovered many of the characteristics of the university, but not its character. Before going to a university it was my custom to take an inventory of my information and preconceptions regarding the institution to be next visited. In the case of Pennsylvania I was surprised and ashamed to find how little I knew of one of the largest universities of the country. When I got back and took account of stock I was still more surprised and ashamed to find how little I still knew, or, rather, understood.

The worst of it was there was nobody I could blame for it except myself. They are all affable and obliging in the University of Pennsylvania, from the Provost to the janitors.



CHARLES CUSTIS HARRISON,
Provost of the University of Pennsylvania.

All hospitable, too; the fraternities could not have treated me any better if I had been a long-lost brother instead of an outside barbarian who, as an undergraduate, had been opposed to fraternities on principle; the principle being that I was not asked to join one until after I had got over wanting to. Then there is at the University of Pennsylvania a rare and useful department, a Bureau of Publicity. This consists of an accommodating young man, some typewriter girls, and a suite of rooms in Houston Hall containing all sorts of statistical and historical data relating to the university, the diagrams and exhibits that had been prepared for various expositions, sets of university publications and files of photographs, all carefully indexed. No other university, so far as I have found, has such a complete and convenient collection of material for the present and future study of the institution. I have felt the need of an office of this kind when I have had to walk miles over various campuses in search of certain men who were said to know something that I said I wanted to know. In particular let me suggest that there should be in each university a society, or, preferably, a person, whose duty it is to collect fugitive publications of all kinds, programs of clubs and festivities, posters and declarations of interclass war, meteoric periodicals and snapshots of student life. A file of catalogues and doctors' dissertations will not satisfy the needs of future historians and biographers. They must have something more if they are to make these dry bones live.

Lastly, in enumerating the facilities I had at Pennsylvania for acquiring the knowledge I did not get, I was lodged at Houston Hall. Houston Hall is to the University of Pennsylvania what the Forum was to Rome. Kipling says there are four street corners whereon if a man stand long enough he will see everybody of importance in the world. It could be said with less exaggeration that a man could see anybody in the university by taking his stand under

the memorial tablet that bears the name of Henry Howard Houston, Jr., B.S., MDCCCLXXVIII, and he probably will not have to wait very long either. Seven thousand persons pass through the door in a day, not allowing for repeaters.

Houston Hall is a big clubhouse, handsomely furnished but not embarrassingly elegant, designed by two architectural students, and intended for the use of the students as a whole. The remarkable thing about it is that it is so used. The Pennsylvanians, old and young, seem to take more pride in it than in anything else about the university. It is practically a unique institution. Most universities have nothing at all corresponding to it. The Harvard Union is its nearest counterpart, but at Harvard certain classes of students call the union "the poor man's club" and take pride in not being seen in it, while in Pennsylvania there is very little of that feeling. Here rich and poor, Greek and barbarian, Jew and Gentile, wise and unwise, bond and free, meet on terms as near to equality as could be expected under present conditions. The building contains a post office, an auditorium, and rooms for reading, writing, billiards, trophies, Y.M.C.A., and various student societies. There is also, filling a long-felt want very inadequately, a lunch counter. This department should be expanded and given better quarters. The cafetaria or "help yourself" plan now so popular in large cities is still better adapted to student lunch rooms and on account of its cheapness could easily be made to pay.

The importance of Houston Hall lies in the fact that it is serving a nucleus in the process of unification or crystallization by which a congeries of professional schools is becoming a definable university. Houston Hall is like the string in a stick of rock candy. Here medics, dentists, engineers, and collegians have a chance to learn to regard one another otherwise than as hereditary enemies. In organization the University of Pennsylvania is in a stage of development

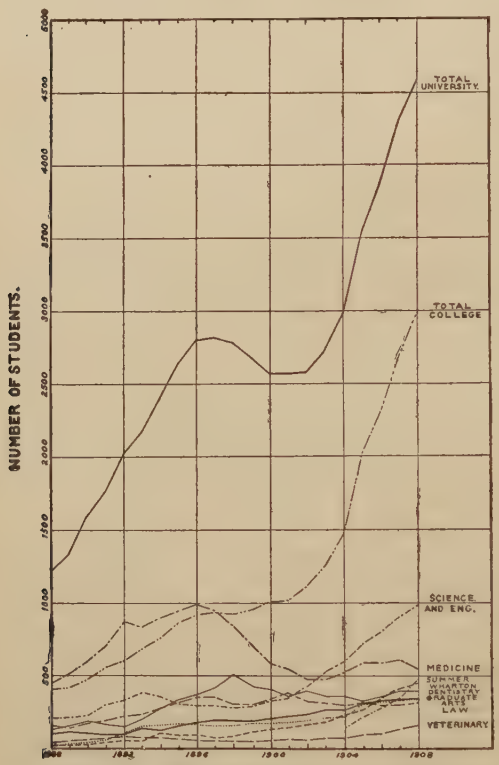
about such as I imagine Columbia was some ten or fifteen years ago.

The process of evolution by which it is passing from a state of indefinite incoherent homogeneity to a state of definite coherent heterogeneity, etc., has been very slow and strangely retarded. For Pennsylvania is the oldest university in America. The others were colleges. The name University was first conferred upon it by the Legislature in 1779. The difference in name was not altogether without significance. The institution was in its early days more of a university than its rivals. Here the first medical school in the United States was established in 1765, "the fees for the course not to exceed six pistoles." It opened the first American law school in 1790. In fact, I cannot mention all of the things in which the University of Pennsylvania has been first. I must, therefore, devote myself, in accordance with the plan of these articles, to those things in which the university is first. This will take less space.

But it is impossible to ignore history in dealing with the University of Pennsylvania. One cannot get away from it. All the walls are covered with it. The buildings are genealogical museums. Paintings, bas-reliefs, inscriptions, windows, relics, manuscripts, and similar memorabilia catch the attention of the visitor wherever he goes. The painted faculty outnumbers the living.[1] I wonder if teachers and students do not get discouraged sometimes at the thought of having to do credit to so long a line of such distinguished predecessors as these look to be. The effect is overpowering to one who has been visiting the Western State universities where they rarely have anything over twenty-five years old. If they have, they apologize for it and explain that they will get a new one when the Legislature raises the appropria-

[1] The Official Guide enumerates 205 oil paintings, mostly portraits for former provosts and professors. The catalogue lists 158 professors and assistant professors.

tion to a decent figure. In Western colleges the literary societies are the most evanescent of organizations. They usually die or turn Greek in a few years. But in the University of Pennsylvania there are two literary societies which are 81 and 97 years old respectively, and still living, actually alive and working. They are the Zelosophic and the Philomathean. Their age could be told approximately by their names, for the same rule holds in this as in paleontology, the longer the name the older the specimen.



STUDENTS IN THE UNIVERSITY OF PENNSYLVANIA, 1888–1908.

It should be stated as the first and most important fact about the University of Pennsylvania that it was founded by Benjamin Franklin. That is not engraved on the stationery of the university as "Founded by John D. Rockefeller" is on that of Chicago, but the visitor acquires the information without any exertion on his part. It does not, however, serve to differentiate the University of Pennsylvania from other Philadelphia institutions. The university, the Franklin Institute, the American Philosophical Society, the Public Library, Girard College, the Manual

Training School, and the *Saturday Evening Post*, all owe their origin in some sense to that fertile and practical brain. The question naturally arises, what would there be at Philadelphia if Franklin had not been starved out of Boston?

The remarkable thing about Franklin's ideas is their vitality and persistence. They are as hard to get rid of as sweet clover. If they are trampled into the mud by one generation, they grow underground and sprout up in the next. The University of Pennsylvania is still raising crops from the old seeding, and has not yet exhausted it. The germ of the University of Pennsylvania was a little pamphlet entitled "Proposals Relating to the Education of Youth in Pennsylvania, B. Franklin, Printer, 1740."[1] The most revolutionary of his proposals and the one he had to fight for hardest was "teaching the English tongue grammatically and as a language." On the idea expressed in the phrase "as a language" he was most insistent. He says: —

"Reading should be taught and pronouncing properly, distinctly, emphatically; not with an even tone which underdoes nor a theatrical tone which overdoes nature."

His specifications for a head master of the school, though not including all the virtues now demanded of the college president, are strong on this point: —

"That the rector be a man of good understanding, good morals, diligent and patient, learned in the languages and sciences, and a correct pure speaker of the English tongue."

An Englishman visiting the institution in its early days notes with astonishment and admiration that "they have a professor whose sole business it is to teach boys their native tongue grammatically and instruct them in reading and pronouncing it with propriety."

But in this Franklin was too far in advance of his age

[1] For this and other historical material see Benjamin Franklin and the University of Pennsylvania, Bureau of Education, Circular of Information No. 2, Washington, 1892.

to be immediately successful. The English department of his seminary was systematically neglected and narrowly escaped annihilation. Nowadays there are English professors everywhere, although it may be doubted whether they are teaching their subject as Franklin would have them. The question may also be suggested whether our universities are not now overlooking the need of training in some things as obvious and everyday as "the native tongue," while they are searching the universe for more recondite topics to teach. In eulogizing Franklin we should not neglect to imitate him in the open-eyed recognition of contemporary demands.

Although Franklin was specially interested in the English School, yet he was not intolerant in the matter of languages. He advocated a differentiation of courses, as follows: —

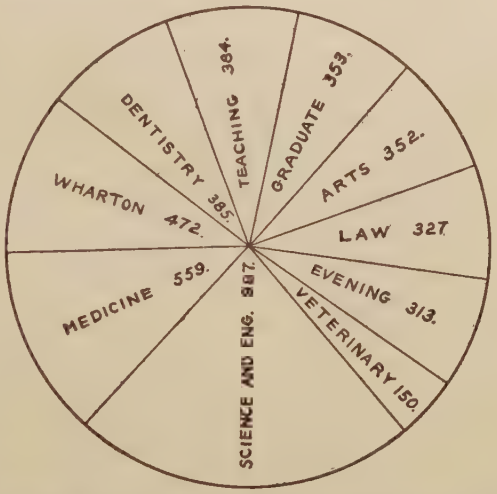
"All intended for divinity shall be taught the Latin and Greek; for physics the Latin, Greek and French; for Law the Latin and French; merchants the French, German and Spanish."

The modern physician would substitute German for the Greek, but some of our leading colleges would come nearer meeting the needs of the times if they adopted Franklin's system as it stands instead of their present requirements. They will probably begin to require Spanish of their commercial students about the time when instruction in Chinese becomes urgently needed.

Franklin regarded Latin and Greek "as the *chapeau bras* of modern literature" — the fashionable hat of the day, made to be carried and never to be worn. Public opinion in America has come to agree with him on the question of Greek, and it has been generally laid aside; but whether as the direct result of the sacrifice of Greek or from other causes, Latin is more popular than ever. It would probably be safe to say that there are now more persons in the world able to read Latin than there were in the age of Augustus. The number and proportion is increasing. In 1890 33.62

per cent of the pupils in the public and private high schools of the country were studying Latin. In 1906 the percentage had risen to 50.17.[1]

Two of Franklin's educational ideas, that is, training for citizenship and for commercial pursuits, were slow in cropping out, but at length found embodiment in the Wharton School of Finance and Commerce and in the Evening School of Accounts and Finance. The primary purpose of Joseph Wharton in endowing such a school was to free people from financial and political delusions and to promote honesty and economy in private and public affairs. A quotation from the document in which he set forth his plan in 1881 will show how Franklinian it is in style and spirit: —



DISTRIBUTION OF STUDENTS IN THE UNIVERSITY OF PENNSYLVANIA, 1907–1908.

"The general tendency of instruction should be such as to inculcate and impress upon the students —

"(*a*) The immorality and practical inexpediency of seeking to acquire wealth by winning it from another rather than by earning it through some sort of service to one's fellow men.

[1] Report of Commissioner of Education, 1907, Vol. II, p. 1052. The figures for some other high school studies may be of interest. Greek, 1890, 4.32 per cent; 1906, 1.85 per cent. French, 1890, 9.41 per cent; 1906, 11.12 per cent. Foreign History, 1890, 27.83 per cent; 1906, 42.17 per cent. Physics, 1890, 21.36 per cent; 1906, 15.43 per cent. Chemistry, 1890, 9.62 per cent; 1906, 6.86 per cent.

"(*b*) The necessity of system and accuracy in accounts, of thoroughness in whatever is undertaken and of strict fidelity in trusts.

"(*c*) Caution in contracting private debt directly or by indorsement, and in incurring obligations of any kind; punctuality in payment of debt and in performance of engagement.

"(*d*) The deep comfort and healthfulness of pecuniary independence, whether the scale of affairs be small or great.

"(*e*) The necessity of vigorously punishing by legal penalties and by social exclusion those persons who commit frauds, betray trusts, or steal public funds, directly or indirectly. The fatal consequences to a community of any weak toleration of such offenses must be most distinctly pointed out and enforced.

"(*f*) The fundamental fact that the United States is a nation, composed of populations wedded together for life, with full power to enforce internal obedience, and not a loose bundle of incoherent communities living together temporarily, without other bond than the humor of the moment."

The presence of a large body of young men who have been impressed and inculcated with these principles ought to make Pennsylvania a model commonwealth, politically and financially.

The Wharton School, being opened in 1883, was slightly antedated in part of its field by the establishment at Columbia in 1880, and at Michigan in 1881, of schools of social and political science. It has the honor, however, of founding the first professorship in American history, held by John Bach McMaster. Here originated the *Annals of the American Academy of Political and Social Science*, when Edmund J. James, now president of the University of Illinois, was the Professor of Finance and Administration in the Wharton School. Professor Rowe, of the Wharton School, is now president of the Academy.

Mr. Wharton, in specifying what should be taught in the school he founded, also stated how he wanted it taught, in language which shows that he was aware of the common faults of college instruction: —



University of Pennsylvania.

THE MEDICAL LABORATORY.

This is the finest of the new buildings of the university. It was completed in 1904 at a cost of about $700,000. The length is 337 feet and the width 192 feet. The interior is finished in white Italian marble.



University of Pennsylvania.

HOWARD HOUSTON HALL.

The clubhouse of the students.

"All the teaching must be clear, sharp and decisive, not languid or uncertain. The students must be taught and drilled, not lectured without care whether or not attention is paid. Any lazy or incompetent student must be dismissed."

This is easier said than done. In such few classes as I visited I did not detect any superiority over the work done elsewhere. The students, in fact, seemed less orderly and attentive than usual, though showing their interest in the subjects by a readiness to question and argue. The evening students appeared more diligent and docile than the day students, probably because their opportunities cost them more personal sacrifice, perhaps also because they were tired by a day's office work. The chief difficulty the Wharton School has had to contend with is the diversity in the aims and preparation of its students. Some have entered the school because they were ambitious; some because they were not. In its earlier days especially it suffered from serving as a catch-all for those who could not keep up in the ordinary college course; and a man who cannot keep up in the ordinary college course is pretty slow. The Wharton entrance requirements, like those of the other technical schools, are less than for the Course in Arts and Science in the School of Arts, and there are many special or short-course students. The regular four years' course of the Wharton School requires no physical or natural science and only one foreign language, and the prescribed work necessarily contains a large proportion of those subjects which in most universities are called "snaps" or "cinches," such studies as geography, anthropology, sociology, political economy, administration, English literature, and the like. This group of studies, dealing with man and the modern world, should by rights have a foremost place in every curriculum, but unfortunately as at present taught their interest is greater than their disciplinary value. They suffer by comparison with the older classical and newer

scientific courses in this respect, for they require too little activity and initiative on the part of the students in all our universities. This may be an inherent defect of these studies, or it may disappear as they become more thorough and systematic in their methods. The Wharton School authorities in order to overcome this defect are trying to make the work harder through a stricter class-room drill. For each lectur there are two periods in which the students are divided into sections of twenty to twenty-five and thoroughly quizzed. They have also succeeded in getting the students to do a great deal of reading in the library.

It is, of course, natural that the men in the old and established professions should regard with amused incredulity the efforts being made to create a new profession, or, rather, a group of new professions, for the University of Pennsylvania has recognized, more than other universities, I believe, that to be practical the courses must be specialized. One of these professions is already emerging from the chaos and taking definite form in Pennsylvania. The State Board of Examiners of Public Accountants in 1907 raised their requirements much above those of any other State, virtually making a three years' course of study necessary for a certified public accountant, and the Evening School of Accounts and Finance is the only place in the State which gives the required instruction. The complete course in this school occupies four evenings a week for three years, and the students who have completed it are said to be better equipped than those who have completed the two years' special course in the Wharton School, because of their more advanced work and their office experience. There is no degree, but a certificate of proficiency is given. Students under twenty-one are required to have a three-year high school course for admission.

I have given a good deal of space to the Wharton and

the Evening Schools because it is one of the most original and promising movements in the university. Taken together they include 725 students, more than any other department and twice as many as are in the College of Arts and Science. It is an attempt to meet two of the needs of modern life that many universities ignore; it gives systematic training in the technique of business and brings it within reach of the men who need it most, those already in business. The department is overcrowded and should soon have the new building which it has long been anxiously waiting. There are opportunities for unlimited expansion in various directions. By coöperation with the engineering schools it could develop courses combining finance and manufacturing, which would be of great usefulness in Pennsylvania. The exceptionally large foreign contingent affords an opportunity to prepare young men to take advantage of the new openings for American trade with Latin America and the Orient. I was surprised to find that there seemed to be no connection between the Wharton School and the Philadelphia Commercial Museum, whose new buildings are close by. The city of Philadelphia could greatly increase its importance as a center of international commerce if it made a systematic effort to utilize the facilities of the university for that purpose. I got the impression, which may be altogether wrong, that the Wharton School, in its effort to individualize itself, had somewhat isolated itself. If so, it is unfortunate, because both politics and finance ought to be kept in close touch with the things that they serve. I should think there would be danger lest the school should turn out men who had no higher aim than to become politicians or stock-brokers, or both.

The centrifugal forces are strong in the College of Arts and Science. The tendency toward the disintegration of the old college, everywhere noticeable, has here full sway.

Each group of allied studies organizes a school and then agitates for autonomy like a Balkan province. Nobody knows where it will all end. If they keep on splitting off pieces from the College of Arts, there will be left only a flock of studies which nobody has any particular use for and a group of students who have no particular use for themselves. In some universities, Cornell, for instance, they are worrying about this a good deal. But nobody seems to worry in the University of Pennsylvania about anything.

Another indication, besides the Evening School of Accounts, that the university is aiming at a greater usefulness to the community is the opening of college courses for teachers and others whose time during the usual hours is occupied. The classes are held on afternoons and evenings and on Saturday forenoon. The admission requirements are the same as for regular college and the same baccalaureate degrees are given at the completion of the work, which, however, may be strung out through as many years as necessary. The range of courses so offered is limited, but includes the fundamental studies in most departments, and a further opportunity is offered by the summer school, which is growing rapidly in popularity. For most of the summer courses credit is now given, and the master's degree may be attained by summer work alone. This will attract more advanced and serious students; and if the facilities keep pace with their demands, the summer session may eventually prove as profitable an adjunct to the university as it is to Columbia and Chicago. Those universities, however, have strong educational departments which Pennsylvania yet lacks. But a good start has been made toward this by the introduction of some professional courses in pedagogy, and particularly the novel and interesting work being done by Professor Lightner Witmer on the development of retarded children. I had a chance to see his "Psychological Clinic" in operation. It resembled a public

dispensary. In the waiting room were teachers and parents with open-mouthed, dull-eyed, and logy children, waiting for examination or treatment. Then in the amphitheater I saw children who a few months before had been equally unattractive and unpromising, but now were doing sums on the blackboard and cutting up between times. Such was the transformation effected by a little surgery, some hygiene, and a great deal of patience.

Through the opening of the teachers' courses and the summer school, women now have a chance to enter most of the undergraduate departments of the College of Arts and Science and to obtain degrees. They are like special trains in a railroad system: they get a chance at the track whenever the regular schedule leaves it free. Still, with a little ingenuity and inconvenience they can get about what they want. The graduate classes and degrees of the college are open to women on the same terms as men, although by a catalogue fiction they are in a separate administrative department. There are several graduate scholarships provided for women, and special accommodations are to be made for them in the new graduate building. They form now about a fourth of the graduate school. The interlacing of courses and the elective system naturally bring women into an increasing number of classes, and as the men discover what harmless and inoffensive creatures they really are the prejudice against them will gradually fade away. This consummation would be pleasing to the founder.

There has been for twenty-five years one curious exception to the rule that women were excluded from the college. The Biological Course, a regular four-year course chiefly composed of botany and zoölogy, but with a rather wide range of election, has always been open to them. I was at first puzzled to see why the women should be allowed to study natural sciences but not literature, which most of them prefer. But on reflection I saw what the reason for

the distinction must be. There is nothing immoral to be found in biology; but the classic literature of every language except the Chinese contains obscenities or passages offensive to a refined taste. If any such discrimination is to be made, no better grounds for it could be found.

In the exclusion of women from the Medical School another factor comes into play, which does not exist in the pure sciences, that is, the trades-union spirit or professional jealousy. This came out clearly in the conversations I had with medical students. When I inquired why they were so opposed to women students, they urged the objection, often heard where coeducation has not been tried, that it would be embarrassing to attend clinics and lectures in the presence of the opposite sex. I appreciated the modesty and chivalry that prompted this reply, but I suggested that the presence of female nurses must be equally embarrassing. The answer was: "Oh, no. We don't mind the nurses. They are a sort of servants, you understand." I did.

It is hard to account for these local variations. Johns Hopkins Medical School, a few miles to the south, has women both as students and instructors. The Law School of the University of Pennsylvania admits women. There are usually two or three in attendance, and some of them have made creditable records. On the other hand a Vassar graduate knocked in vain at the doors of the Harvard Law School in 1909. Some branches of the legal profession seem peculiarly adapted to feminine tastes and talents, and it is likely that they will be largely given over to the women in the future. The fair sex also do well in some of the financial and commercial vocations, so there is no reason why the Wharton School should be monopolized by the unfair sex.

No other university of these fourteen has so many handsome new buildings as Pennsylvania. I do not know that all of the rest of them put together can match them. The

Medical Laboratory Building is only excelled in splendor by the group of medical buildings at Harvard. The dormitories are only rivaled by those of Princeton. The Law Building has none in its class save Harvard's. The only thing to compare with the Engineering Building is the Mining Building of the University of California, and that is not nearly so large and comprehensive. And as for the Veterinary Building, no other comes into consideration. The University of Pennsylvania has bettèr accommodations for its pigs than most universities have for their presidents.

Dark red brick with light limestone trimmings is the material of most of the buildings. In type they are varied but harmonious. The prevailing style of architecture is what I should call the English Collegiate. The reason I should call it so is because I have found that that is the most convenient term to use in talking about new university buildings anywhere. One is less liable to be contradicted when he says English Collegiate than anything else. Anyway I have put the pictures in so if I am wrong the reader will discover it and that will give him more pleasure than if I used the right word. I like to give pleasure.

One thing more remarkable about all these new buildings than their fine appearance is their adaptation to their purpose. They have been planned as well as designed. I do not know how much of the credit for this goes to Messrs. Cope and Stewardson, but somebody deserves a great deal of credit for not making the professors and students work in buildings about as inconvenient and uncomfortable as medieval armor. There are fewer gargoyles on the outside of these buildings than on some, but there are more conveniences inside. They are well lighted and heated and ventilated; they are cleanly and incombustible.

There is a difference of opinion about the policy of putting so much money into buildings. When I have tried to excite the envy of professors in other institutions by prais-

ing these new buildings, they have sometimes retorted, "They need men more than marble down in Pennsylvania." That is true. The reputation of the University of Pennsylvania would have been much higher than it is if the authorities had adopted the policy of the early Johns Hopkins and got the greatest men to be found in America or abroad, even if they had to be housed in garrets and cellars. But the criticism is probably unjust, for it is not likely that they had the choice. All college presidents find it easier to get new buildings than to get professors to use them or janitors to clean them. Many a town has found it easier to get a library building than books.

So I rejoice that Pennsylvania has its splendid buildings. The money has not been wasted. It has been well spent, even though it could have been better spent. And I do not agree with those who think them too fine for their purpose. To be sure the laboratory of mechanical engineering is not much like the shops the students later will have to work in or manage. They are more like those glorified shops we read of in socialistic utopias. But who knows but that some of these young men, finding that filth and noise and ugliness are not essential to industry and that it is quite possible for a workman, when his day's work is done, to step into the street looking as neat and decent as a bank clerk, may bring their own shops into a more utopian condition.

There are now twenty-six dormitory houses, arranged so as to form three quadrangles, one of which is a triangle, the entrance to the whole being through a gateway under Memorial Tower, erected in honor of the sons of the university who served in our war with Spain. The individual houses are also constructed on the single-entry system, each opening on a quad, and none of them containing more than fifty students, who form a self-governing community, composed of men of various classes and schools. The principle

is different from that of Yale, where the College are separated from the Science men and then segregated by classes. The discipline of the dormitories is in charge of a Parietal Committee composed of the proctors resident in the dormitories, and a board composed of one representative elected by the students of each house. The arrangement of the dormitory group about the courtyards gives the effect of cloistration, which is traditionally regarded as conducive to the thinking of high thoughts, a seclusion all the more desirable since the university is in the midst of a great city and the campus is traversed by the traffic of the streets. The Triangle is the scene of the festivities of Alumni day. Last year, however, the loyal alumni did not enjoy themselves so much as usual because they were deprived of their spirits by the hard-hearted Parietal Committee which refused to suspend their rule against the introduction of intoxicants into the dormitories. There was much grumbling at the regulation, and the Board of Directors of the Alumni Association made a formal protest and appeal to the trustees, but in vain. The rule had been made because of certain unedifying spectacles presented here in former years; the alumni, however, claim that they were not to blame for this, but it was the undergraduates living in the dormitory who, rashly attempting, later in the night, to follow the examples of their elders, quite surpassed them in conviviality.

I have already alluded to the influence of the dormitories in promoting, by this mixing of schools and classes, a social unity in the university that tends to compensate for its administrative disintegration. Such a force is especially needed because Pennsylvania has an extremely diversified student body. I do not know of any more so. Princeton and Yale, with their somewhat rigid courses and fixed habits, get a selected set of young men. The State universities are, of course, open to all comers, but the Western States do not have such a varied population as Pennsylvania. An ethnic

study of the student body would make a very interesting thesis, for it would be hard to find elsewhere a population of such diversity of origin, brought together at the same age under the influence of the same environment, where a detailed and continuous record is kept of their physical and mental characteristics. There are representatives in the university of all the Old World races which have been drawn upon to work in Pennsylvania's mines and factories. The son of the capitalist and the son of his humblest laborer may be found in the same classroom. There are boys from the mountains and boys from underground. Some of them have a lineage of scholars well known for two hundred years. Some have parents who cannot read. The students from the city are as diverse as those from the country. Some are well set up and well-groomed young men, and before their luxurious fraternity houses there are automobiles waiting to carry them from lunch to their classrooms, a few blocks away. Then, again, we see the street cars bringing pale-faced, stoop-shouldered young men who snatch ravenously at a scrap of learning and hurry away with it to unknown parts of the city. Some are interested only in the discovery of new methods of electrolysis; some are interested only in the discovery of new methods of ballet dancing. Some care for nothing but cuneiform inscriptions; some care for nothing but teeth. There was a great fascination for me in simply watching the students. The University of Pennsylvania is a more interesting place to visit than Princeton, for the same reason that a botanical garden is more interesting than a grove.

The presence of so many diverse elements in the university is an educational force in itself, provided it is taken in the right spirit, as in general I think it is. There is a noticeable atmosphere of informality and congeniality about the place. I would say democracy, but there are so many kinds of democracy, and every university boasts the purest brand.

I might distinguish by saying that Princeton has the democracy of the club and Pennsylvania has the democracy of the street car.

Not but what the Pennsylvanians have their prejudices. There is, of course, some snobbishness, family or financial. Anti-Semitism occasionally shows itself, particularly in connection with fraternities. There is, as I have said, some prejudice against women as students. The boy who sat next to me in the chemistry class, in which there were half a dozen rather mature ladies, said with a sneer that he did not see why a woman should want to study chemistry. I asked him why he was studying chemistry, and he said it was because he had failed in it the year before. There is some aversion to foreigners and considerable antipathy to negroes. "They generally get run out sooner or later," I was informed by one of the students, but my informant told, not without a certain unwilling respect in his tone, of one negro who was too smart to be got rid of and had reached the Senior class of the medical school. "I wish they had oral exams," he added; "then the profs could soak him."

Pennsylvania is the most cosmopolitan of American universities. It has more students by half from foreign countries than it has from New England. In 1909 there were 225 foreigners enrolled, about 5 per cent of the whole.[1] Among them are 20 from Australia and 15 from New Zealand, more than are to be found in all the other American universities. They are mostly in the Department of Dentistry, a fourth of whose students are foreign, including many from France and Holland. There are 38 students from South America, of whom Brazil furnishes the most, 15. Professor Rowe, on his recent trip through South America, was welcomed in San Paolo, Brazil, by a U. of P. Alumni Club of 18 members. In the number of Asiatic students,

[1] See report of Professor Tombo, *Science*, Oct. 1, 1909.

31, Pennsylvania is surpassed by Yale, 42; Harvard, 43; Cornell, 50; Columbia, 42; California, 46.

There are six national clubs, Chinese, British, French, Japanese, Latin-American, and Russian, and a cosmopolitan club besides. The students from different localities in the United States are similarly organized. There are about twenty-five State and as many more Pennsylvania county clubs among the undergraduates, many of them working in coöperation with the local alumni organizations at home for the greater glory of their Alma Mater. I doubt if any other university has so complete a system.

Our universities in general, and the University of Pennsylvania in particular, seem to be trending toward the organization of the medieval universities, where the student guilds took an important part in the government. The fraternities and these national, State, county, and city clubs have more than a fanciful analogy to the "Nations" or Consiliariæ, although their aims are somewhat different. In 1200, when Germany was farther away from Italy than China is now from America, the Germans of the University of Bologna formed their national club for "the conduct of funerals, the extirpation of rancor and quarrels, the attendance and escort of our Doctorandi to and from the place of examination," and other purposes, specified and unspecified. Nowadays, when medieval pageantry is so popular in our universities, one wonders why these picturesque ceremonies are not revived with the others. It would be a pleasant sight to see the members of the Texas State Club, in cowboy costume and bearing the Lone Star banner, escorting one of their "Doctorandi" to College Hall for his examination and waiting on the steps outside to congratulate or console him. Perhaps something of this kind is what President Lowell meant when in his inaugural he spoke of the need of more honors to scholarship. Another worthy endeavor for these modern "Nations" would be

"the extirpation of rancor and quarrels," even the official feuds of the classes, the bowl and poster fights in which the students are stripped naked or sent to the hospital, and the Sophomore raid on the Freshman banquet, in which hundreds of dollars' worth of furniture and pictures are destroyed, and other rough and vulgar displays of animal spirits.

The University of Pennsylvania seems to have all the fraternities that any university has and some of its own besides. Twenty-six national fraternities are represented here. Considering their power and wealth, it is surprising to learn that they do not run college politics as they do in the Western universities. Music in various forms is one of the most popular of the student activities. There is a school of music somewhere about the institution, but I did not find it. The students I talked with, though active in glee club and operatic work, did not seem to know anything about it, so I judge it has little to do with inspiring and shaping the musical life of the university. The Mask and Wig Club get up annual comic operas in professional style and with more than the professional certainty of success. Last year this club turned over to the university $40,000 of its surplus for the construction of a dormitory to be called by its name. This is a manifestation of the true spirit of college loyalty and ought to be imitated by other student activities which get more money than they can legitimately use. The architectural students are finding an opportunity for the exercise of their artistic talents in the production of old English dramas and spectacles. In debating the Pennsylvanians have shown remarkable ability. In the triangular league with Cornell and Columbia they have won both annual debates, the positive and the negative sides, seven times in the last eight years. Athletics, although the most prominent of student activities, I have not discussed in these pages, because the general public hears

more about this side of university life than it does about all the other sides.

Owing partly to the influence of Franklin, the University of Pennsylvania has been free from sectarian control, although even he would doubtless wish to have more stress laid on instruction in religion and morals than now exists. Pennsylvania, however, like Yale and Princeton, keeps up the custom of compulsory chapel for college students. The absence of a theological seminary has had one practical disadvantage which accounts in part for the fact that the University of Pennsylvania took but little part in the intellectual development of the West and had until recently a rather local *clientèle*. The ministers in small places were the recruiting agents for the colleges. The presidents of most institutions established in the West were ministers. They naturally gave preference to the college they knew most about in the sending of students and the getting of professors, and in that way Yale and Harvard attained a dominant position in the new empire. The most interesting feature of the Y. M. C. A. work in Pennsylvania is the maintenance of a university settlement and a summer camp. The settlement has two large and well-equipped buildings and an athletic field on the bank of the Schuylkill.

Some idea of the trend of graduate work may be gained from the distribution of students. The catalogue of 1908–1909 gives the number of students taking major work in the leading departments as follows: History, 33; English, 33; pedagogy, 25; chemistry, 24; Germanics, 23; classics, 22; physics, 22; political economy, 20; philosophy, 19. This is of course apart from the Medical School, where a great deal of research work is done. An anonymous gift of $200,000 has just been received for this purpose. The engineering department devotes itself strictly to undergraduate training, believing that it is not good policy to attempt to combine with it either research or extension work. The

Wistar Institute of Anatomy and Biology is a semi-independent foundation devoted exclusively to research. It occupies a large building containing laboratories and museums, and offers facilities for investigation free of charge to qualified persons from any institution, thus serving as a sort of clearing house for biological research. The institute has assumed the publication of all the important independent periodicals in its field, *The Journal of Morphology, The Journal of Comparative Neurology and Psychology, The American Journal of Anatomy, The Anatomical Record,* and *The Journal of Experimental Zoölogy.*

The University of Pennsylvania has led in Assyriological research. The expeditions sent out under its auspices, and conducted by Dr. John P. Peters, Dr. Hilprecht, and Dr. Haynes, have unearthed the ancient city of Nippur in southern Babylonia, and discovered thousands of tablets and other antiquities, ranging from a period which Dr. Hilprecht once put as far back as 7000 B.C. Many of these objects are now displayed in the museum, and boxes of them are still in the cellar. A succession of noble volumes of several series are still appearing, written by the general editor, Dr. Hilprecht, Dr. Clay, Dr. Radau, and others, while a personal difference, such as ambitious and sometimes jealous scholars too frequently fall into, has through the papers given the Nippur expeditions more public fame than has all the learned research. Nor must I fail to mention Professor Jastrow's various studies, particularly that in Babylonian religion now appearing in two large volumes in Berlin and in German. The Free Museum of Science and Art also contains a large store of other ethnological specimens, Alaskan, Egyptian, Nubian, and Etruscan. No other university in the country has an archæological museum which will compare with this in richness and variety, and in some respects its only rivals are the Louvre and the British Museum. The completed building will cover nearly twelve acres, and

cost about two millions and a quarter. The part now erected cost, including furnishings and equipment, $389,000, of which the State provided $150,000.

I must mention here two interesting investigations which the University had the honor of starting, but dropped before their point of greatest value had been reached. One was the photography of moving animals by Eadweard Muybridge. The university has 700 of his plates. These experiments revolutionized two arts, painting and drama. The artists said at first that they would pay no attention to them, that their own pictures correctly represented running horses as seen by the eye, that science can never dictate to art. Nevertheless, they had to change their minds and their methods, and already the old-fashioned rocking-horse gallop seems as absurd to us as Egyptian statuary. The Muybridge photographs were also the starting point of the moving-picture business. If the University of Pennsylvania had developed this idea, it would have gained scientific fame and popular appreciation. Incidentally it would be in receipt of an income of several millions a year. I understand, of course, that a university holds to the principle of Agassiz and has "no time to make money." Still it has to have money, and is not it as honorable to earn it as to beg it?

The second investigation I have in mind is the Seybert Commission of 1881. This was appointed by the trustees to investigate modern spiritualism, the funds being furnished by the bequest of Henry Seybert for that purpose. The commission consisted of ten men, among them William Pepper, Joseph Leidy, Horace Howard Furness, and S. Weir Mitchell. They spent three years in investigating every medium who would consent to appear before them, and found nothing but fraud. But it is not enough to expose one generation of mediums, for they crop up later with the same old tricks and some new ones. The com-

mission expressly stated that their report was only preliminary, and asked to be allowed to continue the investigation.[1] They stopped only because they had run out of mediums. If the Seybert fund has not been otherwise used, would it not be in order for the trustees to appoint a new commission? Many people would be interested to see if they would make as short work of Mrs. Piper and Eusapia Palladino as they did of Dr. Slade.

The University of Pennsylvania presents the same puzzle to me as the earth did to the ancients. I cannot see what supports it. How does it manage to do so much with such a small revenue? According to the report of the Carnegie Foundation it was sixth among American institutions in the number of students and eleventh in total income. Obviously the students must pay in tuition fees a larger part of the expense of instruction than in other institutions. This was shown in the table published in the preface of this volume. I have been told that the real financial foundation of the university is a little memorandum book which Provost Harrison carries in his vest pocket when he makes his calls, and that if this fails him, he puts his hand into another of his pockets and supplies the deficit. But what would become of the university if something should happen to that memorandum book? One of the most useful of Mr. Harrison's donations is that he gave in memory of his father, the George Leib Harrison Foundation. This now amounts to a million dollars and provides fellowships and scholarships to men of exceptional ability, assists professors in research work, and otherwise promotes the higher interests of the university. The success of Provost Harrison in raising money will be best appreciated by the college presidents who have failed to accomplish it. But he

[1] Preliminary Report of the Commission appointed by the University of Pennsylvania to investigate Modern Spiritualism. Philadelphia: J. B. Lippincott Company. 1887.

has done more than raise money or give it, he has made good use of it for the development of the university in the ways I have indicated. He does not get credit for all he does because he is so quiet and unostentatious about it. "There goes our little Provost," said a student on the campus to me in a tone that had in it something of affection and was not lacking in the essentials of respect. He had been sitting with the Seniors as they sang in the twilight; he was going to a literary society; just strolling about, unobtrusively, informally, seeing things for himself. This is different from some presidents I had seen. Still nearer to the students, however, is the vice-provost, Edgar F. Smith, Professor of Chemistry, on whom devolves much of the administrative work of the university. I wish it were possible to get up a triangular intercollegiate contest between Professor Edgar F. Smith of Pennsylvania, Professor Albert W. Smith of Cornell, and Professor Thomas A. Clark of Illinois, to see which could name the most students at sight. Every one of them could name his thousands.

During Mr. Harrison's administration the bonds connecting the university and the State have been drawn more closely. In fact, the institution is already doing the work of a State university, only it does not get the pay for it. That is why it is not free to students. It could be made so if the State would appropriate for it a million dollars a year, such as is given by Western States not nearly so rich as Pennsylvania. The constitution of 1776 provided for "one or more universities," and it is time to put it into effect. The difficulty lies in the word "more," for there are several claimants for public support. But a good beginning is being made. The last Legislature passed a bill appropriating $750,000 for the University of Pennsylvania for the biennium, though the governor scaled it down to $480,000, distributed as follows: $130,000 for general maintenance, $130,000 for the veterinary school, $200,000 for the univer-

sity hospital, and $20,000 for the library. The university has also received much assistance in various ways from the city and people of Philadelphia, from its foundation to the present. The old families of Philadelphia have always taken great pride in it and given it hearty support, even in some cases going so far as to send their sons to it. The Philadelphia newspapers pay little attention to the university except to exploit some scandal in connection with it. One may read them for weeks and not hear of anything except the athletic field. The Boston papers fully appreciate the importance of Harvard. The Chicago papers use the Midway campus as a happy hunting ground for scare heads of marvelous discoveries in science and religion. Either way is better than silence. People know more about the University of Chicago than they do about the University of Pennsylvania, even if what they know is not so. But those who do not yet know about the University of Pennsylvania will have to learn before long, for it is becoming an educational power in the land. It was raised through the efforts of Provost William Pepper from a local institution, in which many of the professors taught for the fun of the thing, into the position of a great national and international university. What progress it has made recently I have tried to indicate in the preceding pages. It has gained more students in the last five years than Harvard, Yale, Princeton, Stanford, Johns Hopkins, Chicago, and California, all put together, and its advance in other respects, although not commensurate with its growth in numbers, has been surprisingly great.

STUDENTS ENROLLED IN THE UNIVERSITY OF PENNSYLVANIA, 1888–1910.

Years	College								Graduate	Medicine	Law	Dentistry	Veterinary	Duplications	Total
	School of Arts	Sci. & Engineering	Wharton	Teaching	Evening	Other Courses	Summer School	Total College							
1888–89	110	200	31	—	—	66	—	407	31	458	156	127	58	15	1222
1889–90	121	203	37	—	—	68	—	429	43	506	140	159	64	16	1325
1890–91	106	239	35	—	—	99	—	479	53	609	178	206	70	16	1579
1891–92	98	311	59	—	—	97	—	565	73	703	187	169	76	9	1764
1892–93	112	340	73	—	—	93	—	618	117	871	220	153	92	16	2055
1893–94	140	387	71	—	—	95	—	683	154	841	236	231	78	43	2180
1894–95	126	356	113	65	—	94	—	754	161	897	279	278	78	51	2398
895–96	165	306	97	181	—	122	—	871	172	940	313	323	61	48	2632
1896–97	175	290	101	282	—	69	—	917	161	997	358	373	50	45	2811
1897–98	189	293	87	284	—	85	—	939	155	953	360	432	48	52	2834
1898–99	180	275	94	277	—	100	—	926	158	854	320	502	50	20	2790
1899–00	178	296	125	262	—	107	—	968	172	701	312	434	46	10	2673
1900–01	197	330	139	247	—	93	—	1006	168	584	347	417	60	9	2573
1901–02	222	348	149	202	—	98	—	1019	179	556	386	365	78	10	2573
1902–03	235	425	170	206	—	77	—	1113	192	475	339	403	62	6	2578
1903–04	271	539	187	196	—	65	—	1258	201	472	322	362	82	5	2692
1904–05	266	600	226	181	—	80	137	1490	213	546	303	359	79	15	2975
1905–06	308	727	276	256	154	87	216	2024	298	592	322	330	105	113	3558
1906–07	313	793	335	269	227	90	275	2302	316	592	297	358	110	121	3854
1907–08	322	908	433	357	223	63	362	2668	336	605	303	390	131	154	4279
1908–09	352	987	472	384	253	60	481	2989	353	559	327	385	150	193	4570
1909–10	441	1024	494	575	319	—	434	3287	407	544	345	435	160	152	5033



University of Pennsylvania.

THE DORMITORIES ON THE TRIANGLE.

CHAPTER XII

JOHNS HOPKINS UNIVERSITY

THE Johns Hopkins University has no marble palaces or Gothic dormitories. There are few undergraduates, and they are not distinguished for their prowess in football or for spectacular eccentricities. It does not undertake to do the work of the shop, the patent office, the lyceum, the theater, the government, the church, or the home. It indulges in no fads and frills. It has no ancient history. It is destitute of traditions and picturesque customs. It is distracted by no class wars, faculty feuds, moral revolutions, student rebellions, newspaper scandals, or political persecutions. The chief student activity is study.

Consequently there is nothing left to talk about except the two things for which all universities exist, learning and teaching. It is an institution after Woodrow Wilson's own heart; where the side shows do not draw from the main tent. Here are no cannon-ball jugglers, Circassian ladies, learned pigs, astrologers, fire eaters, or street parades, such as rival concerns have. The whole show is under one canvas, or rather two in different parts of the city.

The Johns Hopkins is free from the common vices of our universities; namely, pomp, pretentiousness, frivolity, superficiality, and extravagance. This is not the same as saying that it is the best of universities. The greatest men are not those who have the fewest faults, and the same rule applies to institutions.

Let no one imagine that the freedom of Johns Hopkins from these easily besetting sins is due to a virtue imposed by necessity. It could profit as much as any other university

by the vigorous blowing of its own horn, and it is under the same temptation to neglect the fundamentals and spend money on the things that are attractive to patrons and the public. The university was born rich, but its character was not spoiled by it, Mr. Carnegie's theory to the contrary notwithstanding. A bequest of $7,000,000 for the founding of a university and a hospital seemed like a big thing thirty-five years ago, though nowadays it would get only a dozen lines in the financial column of *Science*, accompanied by an editorial note expressing the hope that the management of the new institution would be in the hands of its faculty, instead of its president.

The fortune of the Baltimore financier passed on his death in 1873 into the control of the twelve trustees whom he had appointed for that purpose six years before. The founder had not defined his idea of a university or placed any limitation on the use of the fund except that the principal should not be spent for building. The trustees accordingly asked Eliot, of Harvard, Angell, of Michigan, and White, of Cornell, to tell them what a university was and who should be its president. With remarkable unanimity all three of these gentlemen answered that a university was a very different thing from the institutions over which they presided, and that Daniel C. Gilman should be president of it. They were right on both points. It was because of the lack of true universities in America that our graduates were going to Germany for their education. Some of them would have preferred to stop in England rather than bother with the foreign language, but John Bull tapped them on the shoulder and told them to move on. This was before Cecil Rhodes had opened Oxford for us with his golden key.

The essential difference between a university and a college is in the way they look. The university looks forward and the college looks backward. The aim of the one is discovery; the aim of the other is conservation. One gropes for the

unknown; the other holds on to the known. Now, since students are *ex officio* presumed to be in the acquisitive stage of their mental development, it follows that there is less temperamental difference between students and their teachers in a true university than in an ordinary college. In the university the seminar takes the place of the class. The reason why university professors are thus able to take the students into partnership with them is not so much because the students are older as because the professors are younger. The university professors, the pioneers of knowledge, are only partly grown up. Their genius consists in combining the inquisitiveness of youth with the powers of maturity. Their sutures have not ossified. They keep more gristle in their bones. The average college or high school professor, though no more than thirty years of age, is apt to seem older and more awe-inspiring than the world-known savant whom he worships from afar. The former weighs his words to a tenth of a milligram. He feels that forty centuries are looking down upon him; or sixty, according to post-Napoleonic archæology. But the leader of a science feels that nobody is looking down on him. He plays with hypotheses as a juggler with balls. He pops out opinions on all sorts of subjects. He shows a certain elasticity, even irresponsibility, in his speech and action, which is in marked contrast with the dogmatism and dignity of the humbler members of the profession.

I make this comparison merely to call attention to the new educational impulse which we owe especially to Johns Hopkins. In 1850 there were eight nonprofessional graduate students in the United States. In 1876, when Johns Hopkins University opened, there were about 400. Now there must be more than 5000. This does not mean merely that these students are receiving a longer education. It means that they are receiving a different kind of education. They are being trained to be promoters instead of heirs.

The mere extension of the period of high school and collegiate instruction is not necessarily a desirable thing. It may be carried so far as to defeat its own aim. Such is the opinion expressed by President Remsen: —

"If it be conceded that the training of specialists is essential to the highest scholarship, then by advancing the age of graduation from our colleges, we are interfering with the development of scholarship in the highest sense, because the greater the age of graduation from the college, the less will these graduates be inclined or be able to take up the advanced work that is essential to convert them into scholars."

This criticism does not apply to those universities where the later years of the college are devoted to advanced and specialized work. But now, when such strenuous efforts are being made to "save the college," we must look out that we do not injure the university. Perhaps the conflict may be settled by the recognition of two different types of mind among the students requiring different kinds of training, the "pass men" and the "honor men," but none of our universities has yet thought proper, or discovered how, to make such a distinction in a systematic or thoroughgoing way.

I heard a great deal of talk — in other universities — about the decline of Johns Hopkins. This decline is chiefly, if not altogether, relative. Johns Hopkins has been eclipsed by its own success. It is lost in the crowd of its imitators. In its specialty, the manufacture of Ph.D.'s, it had at first practically a monopoly. By 1909 it had dropped to the seventh place, having been passed by Columbia, Yale, Chicago, Harvard, Cornell, and Pennsylvania. But in this field, above all others, it is quality, not quantity, that counts, and there is no way of calculating genius, especially prospective genius. All the world knows what was the quality of that first group of young men drawn from all parts of the country by their thirst for the new learning, but who knows

how the twenty-seven Johns Hopkins doctors of 1909 will turn out?

Let me give the entire list of those first Fellows, for there is no better way of showing what Johns Hopkins has done and is doing.

Johns Hopkins Fellows of 1876

Henry Carter Adams, Professor of Political Economy, University of Michigan.

*Herbert Baxter Adams, Professor of American History, 1878–1901, Johns Hopkins.

*William Keith Brooks, Professor of Zoölogy, Johns Hopkins.

Samuel Fessenden Clarke, Professor of Natural History, Williams College.

*Thomas Craig, Professor of Mathematics, Johns Hopkins, 1879–1900; Editor, *American Journal of Mathematics*, 1894–1899.

*Joshua Walker Gore, Professor of Natural Philosophy, University of North Carolina, 1878–1908.

George Bruce Halsted, Professor of Mathematics, Kenyon College, 1903–1906.

Edward Hart, Professor of Analytical Chemistry, Lafayette College.

Daniel Webster Hering, Professor of Physics, New York University.

Malvern Wells Iles, Consulting Metallurgist, London.

William White Jacques, Lecturer, Massachusetts Institute of Technology, 1885–1891.

Charles Rockwell Lanman, Professor of Sanskrit, Harvard University.

David McGregor Means, Professor of Political Science, Middlebury College, 1877–1880.

Harmon Northrup Morse, Professor of Analytical Chemistry, Johns Hopkins.

Walter Hines Page, Editor, *The World's Work*, New York.

*Peter Porter Poinier, M. E.

*Erasmus Darwin Preston, United States Coast Survey, 1879–1906.

*Henry Joseph Rice, Professor of Natural Sciences, Brooklyn High School, 1882–1885.

* Deceased.

Josiah Royce, Professor of the History of Philosophy, Harvard.
Alexander Duncan Savage, New York.
Ernest Gottlieb Sihler, Professor of Latin, New York University.
Frederick Boyd Van Vorst, Attorney at Law, New York.
*John Henry Wheeler, Professor of Greek, University of Virginia, 1882–1887.

Now, what university president of to-day is willing to place beside this his list of Fellows for the year with the assurance that they will prove to be, on the whole, men of as much distinction as these? Why not? There are now many universities richer than Johns Hopkins was then. They have more prestige and power than that infant institution had. They can offer a prospect of greater reward and the certainty of an easier pathway. They have a larger educated population to select from. It might not be too much to ask that the new science of applied psychology, now making such claims of practical usefulness, should help us to discern in the adolescent organism the promise and potency of future greatness with more surety of success.

Nowadays the office seeks the man, but somehow it does not work much better than the old way of natural selection. The president of a New England college visiting, last spring, a high school in his State, asked one of the Seniors if he had decided where he was going to college? The boy replied that he had not yet made up his mind, that he had had very flattering offers from Pennsylvania and Cornell, but he was waiting to see what Columbia would put up. It would seem that the universities might get together like the United Charities. Possibly, however, the United States courts might hold that to be contrary to the anti-trust laws as a combination for the purpose of restricting competition.

The scholarship net is bigger than ever, but it has a finer mesh, so is catching more of the smaller fry. Graduate work no longer requires the pioneer virtues of renunciation, self-

* Deceased.

sacrifice, energy, and initiative. It is, on the contrary, along the line of least resistance. It takes more energy to stop studying and go at something else than to go on studying. Many of our graduate students have no other momentum than this inertia.

President Gilman took as his motto, "men before buildings," and it was to this policy that the Johns Hopkins owed its success. But in the application there was a difficulty. He consulted an eminent physicist about it: —

"We cannot have a great university without great professors. We cannot have great professors till we have a great university. Help us from this dilemma."

His reply was: —

"Your difficulty applies only to old men who are great. These you can rarely move. But the young men of genius, talent, learning, and promise, you can draw; these should be your strength."

We have seen how wise he was in picking such young men as Fellows. Let us see who the professors were who drew them to that Baltimore garret in 1876. It was as close an approximation to Mark Hopkins and the log as we have seen. Here is the first faculty: —

PROFESSORS

Basil L. Gildersleeve, Greek.
H. Newell Martin, Biology.
Charles D. Morris, Latin.
Ira Remsen, Chemistry.
Henry A. Rowland, Physics.
J. J. Sylvester, Mathematics.

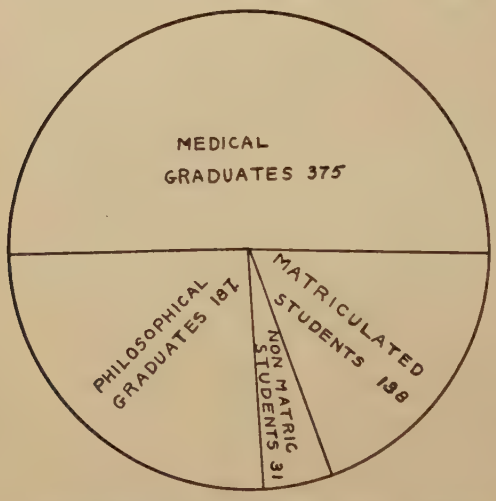
NONRESIDENT LECTURERS

John S. Billings, of Washington, History of Medicine.
Francis J. Child, of Harvard, English Philology.
Thomas M. Cooley, of Michigan, Law.
Julius E. Hilgard, of Washington, National Surveys.
James Russell Lowell, of Harvard, Modern Literature.

John W. Mallet, of University of Virginia, Technical Chemistry.
Simon Newcomb, of Washington, Astronomy.
Léonce Rabillon, of Baltimore, French.
Francis A. Walker, of Yale, Political Economy.
William D. Whitney, of Yale, Comparative Philology.

To what university of to-day can a student go without coming under the instruction of some men inferior in ability to these?

But we are always unfair to our contemporaries in such a comparison. Each generation has said, "There were giants on the earth in those days." It was because President Gilman had the ability to discover giants before they were grown up that Johns Hopkins became at once the leading university of America. And besides this, he had the courage of his ability. Not all presidents could, and fewer of them would, have chosen all these men as professors. The temptation is to stick to an innocuous and unexceptionable mediocrity.



DISTRIBUTION OF STUDENTS IN THE JOHNS HOPKINS UNIVERSITY, 1908.

Any normal school graduate could look down on Rowland because of his defective knowledge of the elementary principles of pedagogy. Yet the proverb is still current in our laboratories, "Better to be neglected by Rowland than taught by any one else." Unfortunately it has often served as an excuse for instructors who resembled Rowland only in their neglect of students. Of Sylvester, enough anec-



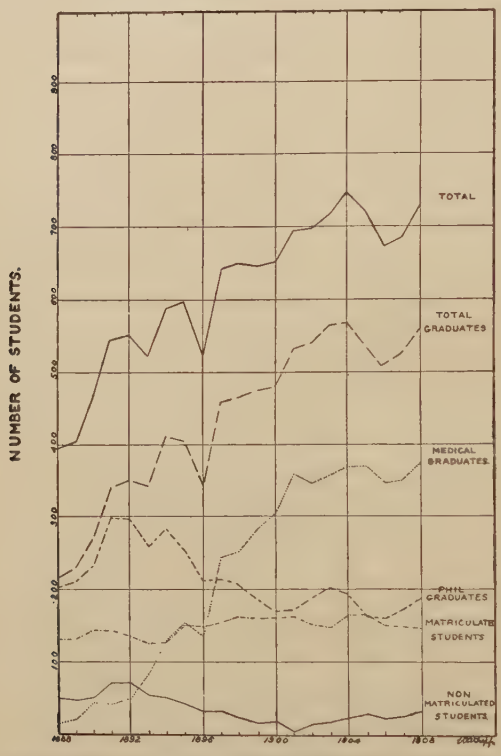
IRA REMSEN,
President of the Johns Hopkins University.

dotes of professional eccentricity are told to fill a whole number of the *Fliegende Blätter*. It required courage also to add Thomas H. Huxley to the list of lecturers in the first year, for he was at that time *persona non grata* to a considerable proportion of the American public. It is often said that a university, especially a young one, cannot be too cautious about choosing professors who are unobjectionable in all respects. President Gilman thought it could be, and he proved that he was right.

Of this first faculty of six, half were English and half Americans. Two of the latter had been educated in Germany, and it was German ideals which molded the university. It introduced the German doctorate as its aim and the German seminar as its method. No better models could have been found. No influence could have been more needed in America at the time. Germany comes the nearest to Plato's ideal of a nation governed by philosophers. It is because the best of knowledge and the highest talent have been enlisted in its industries and statecraft that the empire has risen in wealth and power until now it challenges England for the supremacy of the seas. It was a transformation almost as astonishing as if the Balkan States should by 1950 become a great world power. In this country the State universities are of late coming to resemble the German institutions in the close relationship to administration and in the development of their technical departments, while the endowed institutions have taken to imitating the English colleges.

As I remember, it was in the later eighties that the Hopkins man appeared in the West. Students from rival colleges, meeting at an oratorical contest, — this was before the toga had ceded to arms, — would brag over the acquisition of a specimen of this new species of educator as they might nowadays over an okapi in the museum. "We've got a Hopkins man in our college." "That's nothing.

We've got two of 'em. And one of them has brought a new science with him — biology, he calls it. I'm going to change my course next year so as to take it." "Well, ours is going to start a political science seminar, and all the fellows are going into it. — No, it's not the same as a seminary." "Shut up, here come the judges."



STUDENTS AT THE JOHNS HOPKINS UNIVERSITY, 1888–1908.

The Western institutions, State and denominational, were originally stocked with Yale men. Later they drew from Johns Hopkins, and soon after the Harvard period set in. Now they gather their men from such a wide range it would be hard to point out any particular institution as decidedly dominant. It would be an interesting task to work out the genealogical table of American faculties.

There is something about the American atmosphere which compels to uniformity. However unique an institution may be in its origin or original in its aim, it gradually grows into the type now defined as "the standard American university." Whatever it may have started from, it develops the lacking parts like a crystal or a crab. Harvard, founded

for the training of preachers, turns out electrical engineers and "Masters of Business Administration." The "Industrial University" of Illinois labors to make its graduate courses in philology equal to any in the land. Cornell, "the poor man's college," and Pennsylvania, "the charity school," become noted for the luxury of their student lodgings. State universities impose tuition fees in one way or another, and endowed universities give free lecture courses. So the Johns Hopkins University, started primarily as a graduate school, is now developing most rapidly on its undergraduate side.

It has been prophesied that the founding of institutions devoted to research, such as the Rockefeller Institute, the Carnegie Institution, the museums of New York, Chicago, and Pittsburg, and the scientific departments of the Government, would draw the men having the greatest ability and inclination for investigation, leaving the universities to lapse into their former state of teaching colleges. But there is another tendency equally noticeable. The men who have left the universities, rejoicing that they had thrown off the burden of instruction and administration, and were free to work all day at their hobbies without interruption, come in time to realize that students are not the unmitigated nuisances they once thought them. Gradually students creep in as assistants, apprentices, and disciples; these require teaching; collateral branches have to be added; dormitories are put up; athletics introduced, and there is no telling how far the process may go. We may live to hear of classes in Belles-Lettres at Cold Spring Harbor and a professor of Sanskrit on the Dry Tortugas.

It seems that the peculiar combination which has developed in the United States of instruction and research, graduate and undergraduate students, letters and technology, has some advantages which more than compensate for the alternative advantages of specialization of function.

The case of Johns Hopkins University is significant because it has recently been forced in self-defense to add a Freshman year of undergraduate instruction at the same time when other universities are trying to cut their courses down to three years, and even talk of dispensing with both Freshman and Sophomore. To be sure, the change is not so great as it appears on paper. It has always been necessary to have some first-year classes for students not fully prepared, and it is possible to complete the present course in three years. To accomplish this the student is granted four opportunities: he may enter with advanced standing, he may take extra studies, he is allowed to make up one course by vacation work elsewhere, and he may reduce the requirements for graduation by 5 per cent if "he has an average of not less than 9 for the work of his third year, and has not received a mark as low as 7 for any of his courses since admission to the university."

Some of the reasons why the Johns Hopkins has been impelled to extend downward its collegiate work may be surmised. In the first place, it helps out the finances, because the buildings and equipment are already there, and the fees of the undergraduates relieve part of the heavy burden of graduate instruction. Then there is an advantage in bigness. It is the fashion to speak depreciatingly of "mere numbers," but mere numbers mean a wider range of influence, a larger body of alumni, and a greater popular appreciation.

The chief reason was the difficulty of connecting with the preparatory schools. If the student is to enter the university as Sophomore or Junior, where will he take the one or two years of collegiate work? Most of the high schools, particularly those of the South, naturally tributary to Johns Hopkins, do not provide it, and if a student starts in at another college, he is likely to stay there for his entire course, unless circumstances, over which he has no control, oblige him to

go elsewhere. The sentiment of college loyalty has been so strongly developed in America, chiefly through athletic contests, that a man is regarded as guilty of traitorous or unfilial conduct if he seeks another college. The worst of it is, that this allegiance extends into the graduate school. The universities depend upon their collegiate departments for most of their advanced students. The graduate is more or less blinded by his four years of training in "loyalty"; he is known to his professors and he finds it easier and often more profitable to stay where he is than to fare forth into a strange land. If students in America migrated from one university to another, as they do in Germany, it would serve as a stronger stimulus to the graduate schools than any now influencing them.

Since the Johns Hopkins University now provides a full course of instruction for college students, it is a pity that no more of them take advantage of it. The constituency of the university is quite local. Out of 111 matriculated undergraduates in the last register all are from Baltimore and vicinity except fourteen, and only one of these is from a distant State. If our young men were as eager for good instruction as they are for a pleasant and exciting college life, they would flock to Johns Hopkins from all over the country. Nowhere else can they get so much personal attention from such competent men as here.[1] The ratio of students to instructors is the lowest in the United States, only 3.7. Princeton, for all its preceptorial system, has eight students to an instructor. Some of the classes in Johns Hopkins are, indeed, below the limit of greatest efficiency. The visitor feels this when he enters a classroom and sees a scholar of international reputation teaching an elementary subject to four or five students. If there were a dozen or fifteen of them, each one would get more out of it.

But for one who is hunting for bargains in the educational

[1] See table in the preface.

line there is no place like Johns Hopkins. It has less money to spend and it spends more per student than any other of the great universities. The total expenditure for salaries of the instructing staff divided by the total number of students gives for Johns Hopkins $324. Nearest to this stand Columbia, $250; Princeton, $235, and Stanford, $230.

But opportunities for learning and culture and association with scholarly men are not what draw boys in large numbers to a university. The less personal attention they get from the professors the better some of them like it. And of the really popular attractions to students the Johns Hopkins affords very few. The undergraduates being Baltimoreans, they regard the university as a sort of superior high school. There is no university dormitory or club house to serve as a center of collegiate society. They have a gymnasium and a Y. M. C. A. building, but their principal resort is a dingy basement barber shop, and their chief pastime, according to my observation, is pitching dimes in the alley.[1] The only student publication is the *News-Letter*, a magazine of uncertain character and time of appearance.

It is apparently significant of the changing nature of the university that the first building erected on the new site at Homewood is a concrete stadium. The plans provide

[1] It is only fair that I should quote the very interesting criticism of the *News-Letter* on this point: "The observation is uncharitable and inaccurate. The author forgets Hopkins Club, where the graduate students meet; he forgets the numerous fraternity houses, where the men do something else besides pitching dimes. In fact, only a small proportion of our population engages in this seemingly obnoxious pastime. They do not dissimulate: they play openly. Boys are the same the world over, and when the author visited Pennsylvania and Cornell the offending game was doubtless hidden from his searching gaze by the walls of palatial dormitories or pompous club rooms. As for 'Walter's Art Gallery,' that is utilized solely between periods, and necessity rather than choice makes that our rendezvous. The post office is there, the fresh water, and other conveniences, all at a distance from the Y. M. C. A. Dr. Slosson must remember that appearances are sometimes deceitful, that they may be supported by good reasons."

also for a gymnasium, nine dormitories, a dining hall, and all the other modern conveniences. It was originally intended that the university should occupy a site in the suburbs, but as there was no money for buildings two private residences in the city were made over for temporary occupancy. Later a few buildings were put up and the plan of moving out was in abeyance. Now, however, the Homewood tract has been made accessible by trolley lines and paved streets, and an architectural scheme for its development has been adopted. The proposed arrangement of the grounds and building is indicated on the plan herewith published. It will make an ideal campus, spacious, diversified in contour, and well wooded. The old Carroll mansion, in the colonial style, will remain in its place and give a touch of historicity to this most modern and unromantic of universities. The new buildings, in accordance with the spirit of the institution, will be plain, substantial, and unpretentious. President Gilman, in his inaugural, expressed the hope that the permanent buildings would not be "a medieval pile, but a series of modern institutions; not a monumental, but a serviceable group of structures. The middle ages have not built any cloisters for us. Why should we build for the middle ages?"

According to the architectural plans tentatively adopted for Homewood there will be two groups of buildings; one, an avenue of dormitories with the gymnasium at one end and the dining hall at the other. The other group is arranged like a Gothic cathedral, with a library as the choir, with a chapel on one end of the transept, and an auditorium and administration building on the other end, with laboratories down both sides of the aisle, and with a museum at the foot of the cross. The plans are astonishingly modest compared with the ambitious projects of California, Chicago, Princeton, Wisconsin, and other universities. For example, the largest and most expensive building contemplated is


JOHNS HOPKINS UNIVERSITY
Baltimore
CHARLES STREET
PARK AVENUE
DRIVE
PARK
GRAND STAND

the library, which, according to the specifications, is to provide room "for present and future books, to number about 300,000, with appropriate and comfortable reading space." This is about twice the number of books that Hopkins now has, but it is fewer than Columbia, Harvard, Cornell, Princeton, Chicago, and Yale have at present, and certainly less than any great university should expect in the future. For the new library building of the University of Chicago $814,000 has been raised.

President Remsen estimates that the seven or eight buildings actually needed at the beginning, library, recitation hall, dormitory, Y. M. C. A., gymnasium, and four laboratories, chemical, geological, biological, and physical, can be constructed for a sum between $750,000 and $1,000,000. I do not see how he can do it for that, but I hope he will soon have a chance to try. The General Education Board has offered to give $250,000 to the university if three quarters of a million more can be raised. An institution which has done so much for America and for the world as the Johns Hopkins University, and is capable of doing as much more in the future, ought not to have its work impeded for lack of an amount of money no larger than other universities put into a single edifice. The fact that Mr. Johns Hopkins has not been dead so long as Mr. John Harvard or Mr. Elihu Yale ought not to deter a man of wealth from contributing to the support of the institution which bears his name.

President Remsen is a man of varied ability, but it must be confessed that he is not a good beggar. He does not carry around in the vest pocket of his dress suit a collapsible cardboard model of his next new building, ready at the psychological moment to set it up on the tablecloth beside his coffee cup.

Some college presidents regard the collection of funds as the most important work they can do for education, and

perhaps they are right in so thinking. But President Remsen has other things that he prefers to do, and, strange to say, the trustees approve of his singular view of presidential duties.

Being without millionaire patrons and a large body of rich alumni, it might be thought that the university would turn toward the third fountain of revenue, the State treasury. There is no State university in Maryland, and although the work hitherto done by the Johns Hopkins is not of the kind that receives popular appreciation and support, yet it could add the vocational training and administrative services without interfering with its higher functions. Maryland is not a large or rich State, but if it were as generously inclined toward education as Western States of less resources, it could be giving a million a year to the university. Since 1898 the General Assembly has come to the aid of the university by annual appropriations of paltry sums, about $25,000, but there seems to be no disposition on the part of either State or university to make a closer alliance.

The university maintains, with assistance from the State and Federal Governments, three official bureaus: The Maryland Geological Survey, the Maryland Weather Service, and the Maryland Forestry Bureau. The first has been running for thirteen years, and has prepared topographical and geological maps of the State and monographs on the fossil plant and animal remains. The extensive projects of the State Government for the construction of good roads throughout Maryland are being carried out under the direction of the Geological Survey. The Weather Service was established eighteen years ago, but the Forestry Bureau is a new undertaking, started in 1906. In many other ways the university has been of service to Baltimore and Maryland, most conspicuously in education, in instigating and directing reforms in taxation and sanitation, and in the discovery of improved methods of oyster culture. Many of



Johns Hopkins University.

THE HOSPITAL BUILDINGS.



Johns Hopkins University.

THE BOTANICAL LABORATORY.

The first building erected on the new site at Homewood.

the lectures given at the university by its professors and distinguished visitors have been thrown open to the people, though not so many have taken advantage of this opportunity as one would expect in a city like Baltimore. Above all, the city derives an inestimable advantage in being known throughout the world as the seat of such an institution of learning and culture as the Johns Hopkins University.

A new movement toward the extension of the advantages of the university is the opening this year of College Courses for Teachers, in coöperation with the Woman's College of Baltimore. These are given between 4 and 6 on week-day afternoons and on Saturday forenoons. The classes are open to both sexes, but in order to maintain formally the distinction which is required by Eastern ideas of propriety the degree of A.B. in the case of women is conferred by the Woman's College, even though three fourths of their work may have been done in the Johns Hopkins University. This may ultimately lead to some such relationship as exists between Barnard and Columbia and Radcliffe and Harvard. The Woman's College has a sufficiently high standing in the educational world so that it would not be a mésalliance. President Gilman, in his inaugural of 1876, expressed his desire for some such arrangement as this, and said: —

"Of this I am certain, they are not among the wise who deprecate the intellectual capacity of women and they are not among the prudent who would deny to women the best opportunity for education and culture."

This work for teachers is not altogether a new departure. As early as 1877, Dr. Martin had a class of sixteen, mostly women, meeting Saturday mornings for the study of physiology.

The Medical School has been open to women from the beginning, chiefly through the influence of Miss Mary E.

Garrett and other ladies of Baltimore, who raised a fund for its endowment. About one twelfth of the candidates for M.D. are women, and there are four women on the medical faculty. Dr. Christine Ladd Franklin has had for years a lectureship on the theory of color vision in the university. Women were admitted to the graduate department of the general university in 1907, but in deference to the feelings of a few members of the faculty it was provided that an instructor who objected to their presence in his classes could exclude them. I believe the veteran Professor Gildersleeve is the only one who still holds out against them, but as few women would want to attend his classes, anyway, the restriction is not serious.

Among the daringly sensible innovations of the Johns Hopkins University at the start was the recognition of the futility of maintaining various degrees where the studies were largely elective. Three degrees were established: M.D. and Ph.D. for graduate and research work, and A.B. for undergraduate work. To these was added last year the degree of M.A., requiring two years of residence but no dissertation equivalent to that required for the doctorate. This is probably as simple and definite a system as is now attainable, and the example of Johns Hopkins is to be commended to those universities which are still wrangling over the subject or have adopted as a compromise a meaningless or misleading distinction.

A man might as well write X.Y. after his name as B.A. or B.S., for the distinction between these, if there happens to be any, can only be determined by careful study of the catalogues of the college for the particular years he was there, supplemented by research in the minutes of the faculty committees who may have taken "special action" in his case. Yet it is the importance attached to these meaningless titles by the academic mind that prevents the adaptation of education to individual needs and causes friction

whenever a student would pass from the high school to the university, from one college to another, or from one department to another of the same university. The impossible ideal would be to cut away all this red tape and let any student enter any classes of any university for which he could prove himself qualified, and leave at any time with a simple certificate stating what work he had done or what proficiency he had acquired. There are a few professors in almost every faculty who hold and even discreetly advocate this extreme view. But however impracticable it may be, it is well to keep it in mind to remind us of how much labor and anxiety we spend on unessentials. The English make fun of us because we talk about "graduating" our students. They do not realize that in this country we are apt to devote more time to the "graduation" of students than to their education. We are graduating them all the time, at hourly, daily, weekly, monthly, mid-term, term, annual, and quadrennial intervals, and for a professor to neglect it is the unpardonable sin. He may be in the habit of coming into his classroom without a preconceived notion of what he is going to say; he may sit on the edge of a desk and occupy the hour telling funny stories, and nobody will object. But if he is a day late in sending in his grades, the registrar, the dean, and the president will get after him. And how little these grades and degrees mean after all!

Although the bachelor's degree does not indicate the character of a man's mind or training, it might at least be expected to give the number of years he has spent at some kind of collegiate work, but even here it fails. There is one point in our educational ladder tolerably well fixed, that is, the entrance requirements to a reputable college are probably defined with as much exactness as is practicable. It is becoming the rule to require for entrance to professional training one, two, three, or four years of collegiate work. We need designations for these periods of preparation. Why

not let the degrees sink into innocuous desuetude and simply indicate by some name or symbols the number of years that a man has spent in study since he left the high school? A "biennarian" would be ready to enter most of the law and medical schools. A "septennarian" would be ripe for a Ph.D. if he had demonstrated his ability to carry on original research, or for a corresponding teacher's degree if he had demonstrated that he had the ability to teach. If he did not belong to either of these naturally limited classes, the university would not be obliged to stultify itself by saying he did, out of consideration for his perseverance and industry. He would have full credit for seven years of satisfactory work, just what he is entitled to and nothing more. Instead of meaningless initials a few symbols would summarize a man's whole educational history. For example: —

John Doe, I, II Pr., III Y. (Chem.), IV, V Har. (Biol.), VI, VII J. H. (Med.).

This, which looks a little like a dental formula, stands for a very creditable and consistent course, probably better than the student would have obtained if he had stuck in one institution. He took his first two years of undergraduate work at Princeton, then went to Yale for a year's specializing in chemistry, followed this with two years of work, chiefly biological, at Harvard, and finished with two more in Johns Hopkins Medical. The aniline dyes are exhaustless, so our collegiate dressmakers would be able to put all this on his gown in accordance with the taste for sartorial symbolism which is so characteristic of savages and savants.

What I like about Johns Hopkins is its honesty and earnestness, its freedom from affectations and extravagances. The laboratories and libraries are not show places, but workshops. Yet not such workshops as we are accustomed to see filled with clock watchers and task masters, but rather a communistic atelier such as William Morris might

have dreamed of, where there is no question of hours and wages, of schoolmaster and pupil, of discipline and regulation, but each man works for the joy of working, at his own gait and in his own way, and with such inspiration and energy as he has been endowed with. There is no compulsion except the compulsion in the atmosphere. But this is sufficient to stimulate the most sluggish and to drive the ambitious into an almost fanatical zeal for learning and discovery. The only time the university officers have to exercise their authority is in driving the students out of the laboratory at night. Every university, of course, has men of this kind, but in most places they are lost in the crowd of more or less indifferent youths. But here the undergraduates are few and inconspicuous, while there are 693 men who have finished their college course, have sown their intellectual wild oats, and have settled down to business in their chosen life work. I count professors, instructors, and graduate students all together because they are all together at Johns Hopkins. You cannot tell them apart by age, spirit, or bearing.

Whatever have been the vicissitudes through which the Johns Hopkins University has passed, there has been no decline in the spirit of research. Its income was cut down by the depreciation of its securities; rival institutions have risen, richer and larger and louder, outbidding it for students and professors, but the Johns Hopkins University has never lost courage or lowered its ideals. When a man needed books or apparatus for his investigations, he got them, whatever else went short. In some universities a different idea of relative values prevails.

I shall not attempt to count the proportionate number of the faculty actively engaged in research. Nor can I explain the importance and significance of the work being done in the various departments, one reason for this omission being the inability of the reader to understand the

technicalities involved. But without attempting to be comprehensive or critical, I will mention, in the way of samples, a few bits of its work which have happened to catch my attention. The real monument to Johns Hopkins is not built of marble or bronze, but of more permanent stuff, namely, paper. It is the pile of monographs, periodicals, and dissertations which, to quote the words of Dr. Gilman, is "gathered like a bibliothecal cairn in the office of the trustees to remind every officer and every visitor of our productivity in science and letters."

At the time when the university was founded American scholarship was scarcely recognized in Europe. This was not altogether because there was so little of it worthy of recognition, but because it had no national coherence and distinction. But the Johns Hopkins, following the example of Yale in the *American Journal of Science*, launched immediately the *American Journal of Mathematics*, the *American Chemical Journal*, and the *American Journal of Philology*, which not only stimulated American science, but secured for it proper credit. The university now publishes twelve such periodicals besides many independent volumes.

Running through the list of doctorates conferred in the last four years (1905–1908) I find the following are the leading departments: Chemistry, 34; physics, 17; political science and economics, 11; history, 8; Greek, 8; mathematics, 7; French, 7. Here as everywhere the relative popularity of the different graduate departments depends partly upon the ability of the professors to attract and to inspire students, partly on the opportunities afforded for successful research, and partly by the chances of future employment. In this case all these influences combine to give chemistry an advantage. Professor Remsen has been preëminently a teacher of teachers, and there are few laboratories East or West which do not contain men he has trained. Though now president, he still does as much class

work as anybody. The research work of this department shows how absorbing has become the question of the constitution of solutions which used to be thought too simple to need attention. The work of Professor Morse on the direct determination of osmotic pressure, that of Professor Jones on conductivity, and of Professor Acree on organic reactions, all deal with this newly discovered borderland between physics and chemistry. Sylvester and his *Journal of Mathematics*, Rowland and his gratings, gave the Johns Hopkins the lead in these two branches. The physics department of almost every university has on its walls a frieze of Rowland's solar spectrum, made by the lines cut in metal by the diamond point working away night and day alone in the darkness of the Baltimore cellar.

Of the "Big Six" who constituted that first faculty there is left, besides President Remsen, only Professor Gildersleeve, now seventy-eight years old, but still in active service. He is a standing refutation of the common notion that the critical study of texts necessarily blinds a man to the true value of literature. Professor Gildersleeve knows not only the origin of words, but also what they are for and how to use them. There are those who take the *American Journal of Philology* solely to read the spicy editorial comments on men and books. The facilities for classical instruction have been recently increased by the acquisition of a considerable collection of original inscriptions on marble, and of household utensils and ornaments from Greece and Italy.

In the graduation list of 1879 appears the name of Maurice Bloomfield, of Illinois, receiving the doctor's degree for a dissertation on "Noun Formation in the Rig-Veda." In the latest annual report, thirty years later, there is an announcement of the completion of Professor Bloomfield's "Vedic Concordance," a large quarto volume of 1100 pages, indexing the entire Vedic literature, some 120 texts in all.

The reader's imagination may interpolate between these dates. This is an age and a land in which haste, superficiality, and utilitarianism are powerful; still it seems that these influences can be resisted.

It might naturally have been expected that the study of religion and of the Bible would be monopolized by those colleges which were founded primarily for ecclesiastical purposes and by those theological seminaries which have more endowment than pupils; but on the contrary this purely secular university has been one of the leaders in such work. Even the layman, uninterested in Semitic philology, can appreciate something of the work of Professor Paul Haupt, for he is acquainted with the broad, flat, square, thin, red volumes of the Polychrome edition, popularly known as the "Rainbow Bible"; marvels of complicated typography, distributing fragments of copy among the various redactors with the skill of the managing editor of a metropolitan newspaper. It is a pity that the series was suspended for lack of financial backing before the completion of the Old Testament, for it came nearer than anything else to giving the English reader the viewpoint of the specialist. It cleared away the mists of mistranslation and brought him face to face with the original. But the Polychrome was merely by-play for Professor Haupt; his real work has been the study of Assyriology and the training of Assyriologists.

In this connection it is convenient to note that although the Johns Hopkins is a secular institution and devoted to science and the higher criticism, the relations between the university and the Roman Catholic Church have always been friendly. Many scholastics from the Catholic institutions of Baltimore and Washington have taken work in the university, appearing usually in their ecclesiastical garb. When they go to Harvard, however, they wear mufti. In the State University of Minnesota, near the great Catho-

lic center of St. Paul, I saw many sisters in their black gowns.

The department of philosophy and psychology has had a checkered history. It was in accordance with the scientific character of the university that the new experimental methods should be adopted, but G. Stanley Hall, who opened a psychological laboratory here in 1884, left in a few years to start a psychological university of his own at Worcester, Massachusetts. In 1904, J. Mark Baldwin, he of the big Dictionary of Psychology and Philosophy, came from Princeton, but Mexico proved to have greater attractions for him than Baltimore, and G. M. Stratton, who came to Johns Hopkins about the same time, has gone back to California. Now a new turn has been given to the work of the department through the acquisition of J. B. Watson, of Chicago, whose specialty is white rats, and E. F. Buchner, of Alabama, who takes more interest in white children. H. S. Jennings, who is devoted to the education of star fishes and the eugenics of the protozoa, is separated from his coworkers in psychology and sociology according to the catalogue classification.

America is deeply indebted to the Johns Hopkins departments of history, political science, and political economy, both for the methods and results of their studies. History has never been studied here in the antiquarian and academic spirit, but as "past politics," as a thing of real importance and interest to the people of to-day and to-morrow. Laboratory work was substituted for class study, and now this in turn is developing into field work, which leads the student still farther from the scholastic cloister. One of the fruits of such excursions comes to my hand as I write this, a bulky volume on the typographical unions of the United States, by Professor George E. Barnett, a study of men rather than of books, and of conditions rather than of theories. Another instance of the spirit of the new political economy

is the satisfactory settlement of the financial affairs of San Domingo by Professor Jacob H. Hollander, acting as the Special Agent of the United States. *The Johns Hopkins Studies in Historical and Political Science* is now in its twenty-seventh year. An interesting feature of this work has been the encouragement given to students from the different States to attack the historical problems of their own localities.

The Homewood tract of 120 acres, though not yet to be occupied by the university, gives the botanical department an opportunity for expansion. A botanical garden has been started there on a system as elaborate as a Dewey library index.[1] It is divided into four sections: the first illustrating all the different forms of vegetative organs, roots, stems, and leaves; the second, the various methods of reproduction; the third, the genealogy of plants; and the fourth containing specimens of economic plants, useful and ornamental.

The *alter ego* of the university, the medical department, is as much a thing apart as the Harvard Medical School, in Boston, is from the university in Cambridge. It is situated in another part of Baltimore, near to the hospital, and separated from the rest of the university buildings by a long trolley ride. To do justice to this department would require another chapter — and another author. Starting in 1893, the medical school soon caught up with the philosophical department, and now has nearly double the number of students. Though every medical school in the country has its peculiar superiorities to boast of, they would probably all vote that the Johns Hopkins stood second. Harvard is its nearest rival in the higher branches of the profession. Both require a college degree for entrance. The Johns Hopkins has, of course, no such palatial buildings, but, as I have said, they do not care much

[1] See *Johns Hopkins University Circular*, No. 6, 1909.

for show. The close connection between the school and the magnificent hospital which was created for this purpose by the other half of the Hopkins fortune gives the students a great advantage over institutions where the hospital facilities are inadequate, at a distance, or under alien control. The Johns Hopkins has a larger number of beds under its direct control than any other university.

But hospital treatment after all is but cobbling at best. The new and brighter field that is opening out to our physicians is that of preventive medicine, calling for men who will insure good health to the community and the individual. This must be based upon the experimental research which has been the chief characteristic of this university in all its departments. This work requires its martyrs, and volunteers are not lacking — such men as Dr. Lazear, of Johns Hopkins, who gave his life to the stegomyia that men might know how to conquer the yellow fever. Just now national sanitation is in the commission stage, and Hopkins men have done much of this form of public service, for which their proximity to Washington gives them special facilities. Most prominent among these promoters of "administrative medicine" has been Professor William H. Welch, whose executive ability and genial manner have made him the leader in many scientific movements of national scope. On the wall of McCoy Hall, the main building of the university, there hangs the portrait group of the four men who made the fame of the Johns Hopkins Medical, Doctors Halsted, Kelly, Osler, and Welch. At the time when this picture was first exhibited the London *Times* made one of its usual kindly comments to the effect that it was fortunate that these gentlemen had their portraits painted by John S. Sargent, R.A., for they otherwise would be unknown to posterity.

The latest advance in the Johns Hopkins medical department is the establishment of a Psychiatric Ward through the gift of a million dollars from Mr. Henry Phipps. A

large building of five stories has been erected and fitted up with all imaginable conveniences for the treatment and accommodation of patients of all degrees of mental aberration.[1] No gift could have been more welcome and useful, for the American people are the most nervous in the world, or regard themselves as such, which is just as bad, but we have not kept up with Europe in the study of nervous diseases.

I should like to say something about another branch of the medical work of especial interest, that is the Johns Hopkins Hospital School for Nurses, but I have only space for a mere mention.[2] There are this year 131 women enrolled in the school. A three-year course is given, which includes not only attendance on the sick, but much of sanitation, cookery, and household economics.

I have, in dealing with some of these universities, ventured to forecast their future, but even my presumption fails in regard to the Johns Hopkins University. I cannot tell what is going to become of it. It may, of course, continue indefinitely in its present form, a most useful and highly respected institution. But, like a small commercial establishment in the face of trust competition, it would find it increasingly difficult to maintain its efficiency and prestige. A big university grows like a snowball, with an acceleration proportional to the square of its radius of influence. A summer session is supposed to be impossible on account of the Baltimore climate, but the summer students are the most useful press agents a university has. On account of their migratory habits they get an unusual insight into the comparative merits of different institutions, and they direct their own students accordingly. Then, too,

[1] For a description of the building see *New York Medical Journal*, Sept. 11, 1909.

[2] For particulars see the official circulars and *The Johns Hopkins Nurses' Alumnæ Magazine*.

the big schools of applied science and engineering which the other universities possess serve to strengthen an institution in many ways. The Johns Hopkins University has but one school of applied science, that is the medical. One reason why the medical department of the Johns Hopkins stands higher in comparison with other medical schools of the country than the rest of the university — the philosophical department — does, in comparison with its rivals, is, in my opinion, because here theory and practice go hand in hand.

If the university should get a windfall and move out to Homewood, it would be likely to develop into an institution of the same character as many others we now have, a large suburban college community, living in dormitories with all that that condition involves. But all the colleges, large and small, draw a majority of their students from their neighborhood, chiefly from an area within one or two hundred miles. The region round about Baltimore, however, is not densely populated with college-loving youths. Neither is the South generally, from which Johns Hopkins would naturally draw, any better off in this respect, while to the northward it would come into competition with numerous well-established universities. If the university at Homewood should, as at present, do without vocational courses, it would be involved in an incessant and unpromising struggle to "save the college"; that is, to induce students to take what they do not want in preference to something else that seems to them more useful and attractive. But on the other hand, to add vocational courses on as wide a scale as the State universities and technological institutions are now doing is a great undertaking.

Something that President Remsen once said suggests a third alternative: —

"It is becoming very difficult to find properly qualified men to fill vacant university professorships. Given sufficient inducements, and it would be quite possible to corner the market."

If the "sufficient inducements" are at bottom a matter of money, a windfall, such as may reasonably be hoped for in the near future, would give President Remsen a chance to try for such a monopoly by adhering to the old policy of the Johns Hopkins, "men, not buildings." If he succeeded, it would restore the university to its pristine position of leadership. If he failed, such a bull movement would have an excellent effect on the country at large in improving the market for prime sorts.

STUDENTS ENROLLED IN JOHNS HOPKINS UNIVERSITY, 1888–1910.

Years	Philosophical Graduates	Medical Graduates	Total Graduate Students	Matriculated Students	Nonmatriculated Students	Total
1888–89	202	14	216	129	49	394
1889–90	209	20	229	130	45	404
1890–91	233	43	276	141	51	468
1891–92	298	39	337	140	70	547
1892–93	297	50	347	133	71	551
1893–94	261	83	344	123	55	522
1894–95	284	128	412	126	51	589
1895–96	253	153	406	149	41	596
1896–97	210	134	344	144	32	520
1897–98	215	241	456	152	33	641
1898–99	210	252	462	163	24	649
1899–00	185	284	469	159	17	645
1900–01	168	305	473	158	20	651
1901–02	172	358	530	158	6	694
1902–03	187	345	532	147	16	695
1903–04	202	354	556	141	18	715
1904–05	195	368	563	160	23	746
1905–06	162	368	530	163	27	720
1906–07	158	346	504	146	21	671
1907–08	171	347	518	142	23	683
1908–09	187	375	562	138	31	731
1909–10	178	390	568	143	14	725



Photograph by Matzene

HARRY PRATT JUDSON,
President of the University of Chicago.

CHAPTER XIII

UNIVERSITY OF CHICAGO

IN our time three universities have been raised from the seed: Johns Hopkins, Leland Stanford, and Chicago. The youngest and greatest and most original of these is the University of Chicago. Scarcely had its cotyledons appeared above the surface of the Midway soil when it was seen to be a new species, a mutant. Though now that it is full grown it looks more like the rest of the genus than we thought it was going to, still there is enough that is novel about it to make it interesting.

One of my objects in visiting these universities was to point out what new things were being undertaken. In some instances I found this difficult, but in this case the difficulty is of the opposite sort, to find space to mention all the departures from traditionalism which we owe to the University of Chicago. That was because a man of creative and administrative genius found here an unparalleled chance to carry out his ideas. William Rainey Harper was a big man who did big things on a big scale and made big mistakes. And this is a point worth noting. His successes were where he struck out new paths for himself according to the needs of the situation; his mistakes, or what I should call such, were where he attempted to copy Eastern and English colleges. But all his mistakes were not failures, nor all his failures mistakes.

Beginning in 1891 he issued a series of revolutionary manifestoes which burst like bombs in the educational world. The West received them with amazement; the East with amusement. But the amazement soon changed

into admiration, the amusement into trepidation. For the new projects were not merely broad; they were iconoclastic. Though varied in their character, most of them had the same aim, the breaking down of the barriers between the life of the university and the life outside, barriers which six centuries of scholasticism had erected, buttressed, and adorned. President Harper planted his bombs under the walls of the university so there was cause for alarm. "If the walls go down, what will there be left of the university?" cried those who were sheltered within them. "And, moreover, what will become of the ivy? That particular species of ivy can only grow on decayed collegiate stone, and it is worth while keeping up the walls for the support it gives to the ivy." They need not have worried. Some of the breaches that President Harper made in the scholastic walls have been repaired and others partially concealed by ivy, transplanted from Oxford for that purpose.

Most prominent among the innovations directed toward setting the university free from its confinement within four walls and four years were the summer quarter, the press, the extension work, the down-town classes, the correspondence courses, and the affiliated colleges.

The summer quarter was the most radical and most successful of the innovations. It was not merely the extension of the session for the better utilization of the plant or the shortening of the college course. Its most marked effect was to loosen up the college system and give it a flexibility that enabled it to adapt itself to varying conditions as never before. There were many objections, valid and invalid, brought against the summer session, but it is not necessary to repeat them here as they are only of antiquarian interest now. If any one wants to know what they are, he can hear them at New Haven or Baltimore, or in undertones at Ithaca and Cambridge.

President Harper divided the year into four quarters. It is true this had been done before, but the colleges had not found it out. Each quarter of twelve weeks ends with a commencement or convocation for the conferring of degrees. Even this was not often enough, and he used to run in extra convocations once in a while like extra dances at a ball.[1] That was a nice thing about President Harper; he was fond of regulations, but he had no reluctance about making exceptions to them when desirable. This is unprofessional but handy. These intercalary convocations appeared most unexpectedly. Some morning the students going into Cobb Hall would see the announcement of one next week, posted on the bulletin board, near a laundry advertisement, the notice of a steamboat excursion, a fountain pen lost, and a request for two stenographers ($40 a month each) and one experienced teacher of Latin ($20) to call at the appointment office. But no matter how impromptu the occasion, it lacked none of its usual pomp and circumstance. There was a procession and a recession of such of the faculty as could be got out by a double hurry call. The long line of candidates was marshaled before the president who gave them their diplomas *ex cathedra* with as much solemnity as possible, considering that the cathedra was much too big for him and the candidate was dazed by being addressed in Latin for the first time in his life, and by the efforts of a dean to lasso him with a maroon hood. Then there was always an address by somebody worth listening to and talking about afterward. But however distinguished the orator was, he could not compare with the president when he read his quarterly statement of the condition of the university, the record of its growth, the long list of its gifts, and the longer list of its needs. I never heard any one who could read a table of

[1] In 1898 and again in 1901 there were six convocations instead of the regular four.

figures with such eloquence as President Harper. Perhaps it was partly in the audience. I believe Western people are more easily aroused to an emotional interest in statistics, especially statistics of growth, than are Eastern people. I doubt if Yale and Harvard students, for all their traditions of loyalty and devotion, feel so personal a delight in the prosperity of the university as did the Chicago students in the early days. When the president announced that money had been given for a new biological laboratory or the biggest telescope in the world, the teacher who had come on from Georgia or Oregon for a six weeks' vacation and never expected to come again, although he generally did, felt almost as happy as though the money had been given to him; in fact, he felt that in some sense the money had been given to him. And when the president stated, for example, that the trustees had decided to give J. D. to the lawyers, the five thousand people in the big circus tent felt that they were indeed fortunate to have been able to participate in such an epoch-making occasion in the history of educational progress. They felt like the signers of the Declaration of Independence, only not so scared. In some way he managed to make the summer students feel that they were partners in a great enterprise, that they were being let in on the ground floor of a good proposition, and when they scattered to their homes, they said to themselves, "Well, Rockefeller and I have a big undertaking on our hands, but I guess with the help of that man Harper we will put it through." And they did. It is a remarkable thing that the munificent gifts of Mr. Rockefeller have always been given in such a way as neither to arouse the feeling of being patronized nor to deter others from giving large or small amounts to the institution.

Now all this is not so much of a digression as it seems. I started out to explain why the summer session at Chicago was more of a success than elsewhere, and that is what I

have done. It is a mistake to assume that summer students are incapable of loyalty and enthusiasm because they have not had four solid years of football and class rushes and dormitory life. Whether you feel at home in a house or not depends less on the length of your stay than on the geniality of the host and congeniality of the company.

In some universities the summer students were treated as intruders, as second-story men, taking an unfair advantage of the institution by slipping in when the house was empty and carrying away with them a lot of learning to which they had no legal right. In Chicago they were somehow made to feel at home from the start, and the second season they swaggered about the campus as though they owned it, and patted each new building on the back as if it were a new pig or calf. Like the habitués of a restaurant, if they did not see what they wanted on the curriculum, they asked for it and generally they got it. They were ravenous for information. Any man talking on any subject at 4 P.M. in the Kent Theater could be sure of an audience, one audience. If he got a second audience, it was because he deserved it. For the estival student differs from the hibernal species in being more independent and intractable. He is inclined to be oversensitive, argumentative, and bumptious, for he finds it difficult to lay aside his schoolmaster's manner and assume a pupil's docility.

But the instructor who has the patience to bear with the whims and stubbornness of the summer student gets his reward. He may know that next winter his casual remarks will be quoted as oracles and his mannerisms imitated in the classrooms of a dozen States. The man who comes a thousand miles to get an idea, goes off with it into a lonely place and thinks about it for nine months, and then comes back for another one, is after all a man worth talking to, though he may not seem so at the time. Even one of President Harper's glowing prospectuses could not excel

the descriptions of the University of Chicago given by the summer student returning to his native village. His bewildered hearers would be quite excusable if they got the impression that the Art Institute, the Field Museum, Hull House, Sans Souci, the stockyards, and the lake were all departments of the university. A summer on the Midway campus was a teacher's institute, a foreign tour, and a picnic all in one.

It was Dr. Harper's aim to make the summer quarter the full equivalent of the other quarters. He more than succeeded. It became the most important quarter in both numbers and quality of work. Last summer (1909) there were 3253 students in the summer quarter, and 2339 in the following autumn. The proportion of graduate students in summer is greater than in the rest of the year.

In the beginning the head professors showed a disposition to confine their attention to the "regular" students in the conventional nine-month session, and to throw the burden of the summer work on their subordinates, but by and by it was apparent that those who taught in the summer were getting the most of the research students for the rest of the year, because these usually came to the university in June and stayed on. After this was discovered it became easier to get professors to take their vacations in one of the other quarters.

Work in the summer quarter has a curious reflex influence on the instructors, an influence that will, I believe, prove to be far-reaching and, on the whole, beneficial. They find that the teaching of men and women is altogether different and somewhat harder, but may be quite as interesting and important as the teaching of boys and girls. It is not a matter of age alone. The graduate student who has done nothing but go to school all his life retains a certain immaturity of mind and disposition. Though he may be thirty, he seems younger than the man of twenty-three who has been making

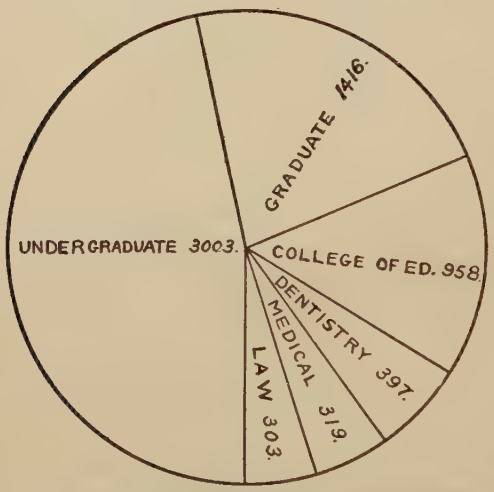
his own living for several years. The returned graduate brings into the classroom an independence of judgment, a skeptical spirit, and a realization of the practical requirements of life that is sometimes disconcerting and sometimes stimulating to the instructor.

But a mixed class of holdovers and recidivists is an amusing combination. One summer day, in Washington Park, I happened upon a youth studying under a tree. I began to talk of the advantages of the summer quarter, but found that he did not share my enthusiasm for it. "A confounded imposition, I call it," he said. "You see, there were two of us fellows who failed in Latin, and they said we could make it up this quarter, but there are twelve in the class, and all the rest are gray-headed college professors or old-maid schoolma'ams who have been teaching the stuff for years and are back to get 'methods,' and the prof is racing them through like lightning and pretending that he does it like that all the year round."

Educators are fond of talking about the desirability of students who love learning for its own sake, but when they get them, they do not know what to do with them. A large and increasing proportion of the summer students in the universities generally are of this type. They do not care to bother about credits and degrees, they want what these things stand for, but the various registrars, deans, and advisers make their lives miserable by insisting on their being registered and "checked up" and classified and put through the mill in the conventional order. There is, unfortunately, a prevailing opinion that a large proportion of graduate students "not candidates for a degree" is a disgrace to a university. It ought rather to be looked upon as a credit, as an indication that the institution is attracting students who are after essentials, not symbols.

The old theory of education was that a man should get his schooling once for all in his youth and be done with it,

like the measles. It was at one time actually thought that a college course could be made broad and foresighted enough to give a man all he needed in the way of external assistance throughout his future career. If he came back, — except to whoop it up on Alumni Day in a clown's costume, — it was felt as a reflection on the university for not having done its work thoroughly when it had him. They say that a man should be independent and prove his manhood by not running to his mother whenever he gets into trouble, but this assumes that Alma Mater like mortal mothers gets antiquated and enfeebled in intellect as she grows old, which is often but not necessarily the case.



DISTRIBUTION OF STUDENTS AT THE UNIVERSITY OF CHICAGO, 1907–1908.

Whether a man wants to come back to the university for help in after life depends on whether the university is a reservoir or a spring. If it is a storehouse of static information, he can get along without it. If it is progressive and creative, he will be drawn back to it repeatedly for inspiration and insight.

The greatest service that the University of Chicago has rendered to the country has been in breaking up the phalanx and giving the irregulars a chance. It has been less worried than some institutions over its unclassifiable graduate students. It has been hospitable to all sorts and conditions of men and as many varieties of women. It has met the

earnest student halfway. It has even welcomed returned Ph.D's. It has been respectful to gray hairs. Last summer an instructor had in his class a student who had been graduated from Dartmouth the year before the instructor was born. That is the proper spirit. If men keep putting off taking their "final degree" long enough, they may get over wanting it and come to realize, even to admit without blushing, that the degree was not what they were working for after all. The system of indeterminate sentence and release on probation may do as much for the reform of the universities as it has of penitentiaries.

I do not mean to say that all the men and women who have been brought into the university by the far-flung net of summer and extension courses are of this unworldly and unselfish type. Many of them are sordid and mercenary. They have to be. Every additional letter after their names means a few more dollars a month and a little more ease and comfort for those dependent on them. They compare with anxiety the growing pile of credit cards in the registrar's office and the dwindling bank deposit in the bursar's office; for if the one does not increase as fast as the other diminishes, they have lost, perhaps forever, their chance of rising out of the sweat-shop level. This fear emboldens them to badger the dean for better grades and to rake up every scrap of credit from their kindergarten period to the present. We overhear bits of conversation like this: —

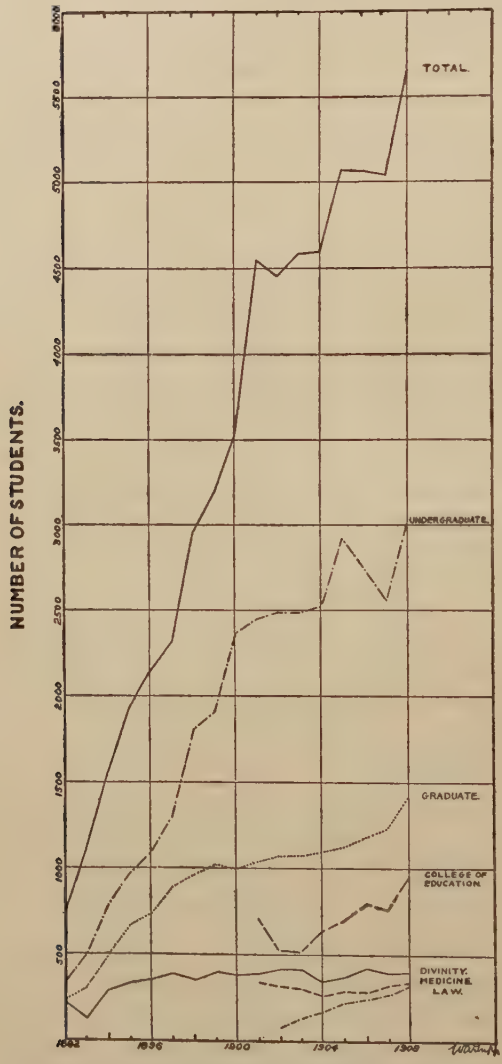
"Why are you taking Head Professor A.'s course? Don't you know that Dr. B. is much more interesting and helpful?"

"Yes, I know. I don't care a bit for A.'s stuff, but his name will count for more on a recommendation than any other."

That is the other side of it. But it is the universities which are to blame for the exaggerated value that principals and presidents and boards put upon degrees, and it is the universities which should lead in the reform. Then the university professor would come to regard himself as different

from an athletic coach training a team for an intercollegiate contest.

One of the novelties of the Columbian Exposition was a moving sidewalk. The University of Chicago was constructed on the same plan. You get on whenever you want to, and you go as far as you like. One of the students who registered at the beginning, in 1892, received his degree in 1907. Each quarter is to a certain extent complete and independent. This has the disadvantage of requiring some repetition of common courses and of breaking the continuity of a study. The break, however, is usually only a formal one for a student in continuous residence, and there are some decided advantages in the plan besides the obvious one of convenience to irregular



THE NUMBER OF STUDENTS IN THE UNIVERSITY OF CHICAGO, 1892–1908.

students. It tends to promote concentration of effort. Instructor and student get down to business quicker and waste less time at the end. Instead of giving the students a week or two for preparing for examination and for other purposes, the final recitation periods are utilized for examinations. Wherever there is a summer school it has produced a noticeable effect in this respect on the character of the teaching in the rest of the year. June seems a long way off to an instructor starting his lectures in October, but he can see the end of a six, eight, or twelve week's course from the beginning. Consequently the professor of chemistry does not spend so much time talking about phlogiston at the start that he has to leave out radium at the end. Procrastination and dilatoriness are the common vices of the scholastic temperament. Much that passes in collegiate circles for leisureliness is what the outer barbarians call plain ordinary laziness. Any measure which tends to correct these evils should be viewed with favor.

President Harper would have gone much farther in the way of concentration of attention if he could. What his ideal was may be guessed from what he did when he had a free hand, as in the summer schools he started ten years before the university was founded. He gave his beginners in Hebrew four hours of recitation work a day, five days in the week, for ten weeks. His plan for the university was that a student should take but two studies at a time, a major and a minor, reciting ordinarily twice a day in the first and once in the second. Apparently the plan did not work well. At any rate, it was soon virtually abandoned.

Most of the students now take three courses at a time with a few other things thrown in, and many take four or more courses as in other universities. The practice of double daily work is still kept up in Dr. Harper's old class of elementary Hebrew and in some of the laboratory and research studies, but not in many other classes. Still, I think that,

owing to the combined influences of the original plan, of the summer work and of the quarter and term divisions, work at Chicago is less likely to be unduly diffused and prolonged than in the other universities. I wish the two-course system had been longer tried, for it might have served as a corrective to the prevailing evil of scattered work. Almost all the universities are now trying to shorten the collegiate period or to get more work out of the students, but as our present courses are made to suit the leisurely student, taking more work means taking more kinds of work. That is, the better the student, the worse his class schedule.

President Harper also wanted to have much smaller classes and higher salaries than was the custom, but these reforms could not be carried out on account of the expense. To give the university prestige from the start men of renown were called to the head professorships by the offer of salaries exceptionally high for that time. This initiated a movement for the raising of salaries all over the country, but it later caused embarrassment as the university grew, and the president found that he had not Fortunatus's purse to draw upon. The subordinate professors and instructors were inadequately and disproportionately paid, as they are everywhere, and promotions were felt to be an empty honor when the salaries of the new men had to be on a lower level than those of the charter members of the faculty. This was the cause of much discontent and some withdrawals.

No university had ever before received such generous gifts from many different individuals in so short a time, but no amount of money would have been sufficient to keep up with the projects generated in that active brain. Dr. Harper's gigantic and far-reaching plans caught the fancy of business men of kindred imagination, but his chronic deficit of one or two hundred thousand dollars a year repelled them. His successor has done in three years what he could never have done. President Judson, by careful



University of Chicago.

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HUTCHINSON TOWER GROUP.

management and some curtailment, has succeeded in making both ends meet and has placed the institution on a sound financial basis. The total productive endowment of the university is now $14,870,903.01 to a cent, and it has besides $8,917,708.10 invested in buildings and grounds devoted entirely to university use, and $1,916,314.49 in equipment, scientific apparatus, etc.

The system of affiliated colleges established by President Harper has now been definitely abandoned. It was his theory that undergraduate work, particularly of the two lower years, should mostly be relegated to smaller institutions in various parts of the country under the supervision of the university. The students could migrate freely among them, passing north in the summer and south in the winter, like the wild fowl, and their instructors would enjoy so far as possible the laboratory and library facilities of the university. A considerable number of reputable colleges entered into the relationship, and more seemed likely to follow their example, but the plan did not work. I do not understand exactly why. Of course the alumni of the small colleges opposed what seemed to them a loss of independence and a recognition of inferiority, but then, alumni, as a rule, oppose every change, good or bad. They called it "applying trust methods to education." Perhaps it was, but I believe that some such arrangement between the small colleges and the great universities will inevitably come about before many years, and when it does, the colleges may find that they cannot get as favorable terms as those offered them by President Harper.

I may as well confess, since the observant reader has already detected it, that I am one of the thousands on whom those first six bulletins outlining the policy of the new university made an indelible impression. No matter how many times they are tried and fail to work, I have to believe that they somehow ought to and somewhere will. One of

the most revolutionary of these measures, one which for many years appeared to make little headway, is now coming into effect in almost every great university, in some of them more rapidly though less formally than in Chicago. This is the division of the college into two sections of somewhat dissimilar methods of instruction and discipline, here called the Senior College and the Junior College. The traditional four-class system is obviously breaking down and cannot be maintained much longer anywhere. Its carefully cultivated enmities, its rigidly enforced barriers, and its lock-step progression have made it an acknowledged nuisance and an impediment to educational advance in desirable directions. The universities have become too large for the classes to form friendship groups, the elective system has broken the alignment, and the pressure of professional schools has started cleavage planes at right angles to those of the classes. The present movement for putting pass and honor students on differential gearing will be the end of it. Where a majority of the students finish the college course in three years or drop out of it at the end of two to take professional work, the old class distinctions become meaningless.

But, although the University of Chicago was the first to recognize frankly the necessity of abandoning the old four-class system and the first to attempt the formation of new groupings, it has not succeeded in solving the problem. Conditions there are as chaotic as anywhere. The old régime has gone and the new has not come. Some ghosts of the past linger about the institution, the class presidents of nonexistent classes, for example, and certain grotesquely disguised figures who are to be seen in the fall, doing stunts on the campus at the dictation of those who in their own language are called "three quarters men," but elsewhere are called Sophomores. Some prophecies of the future are to be seen in the Junior and Senior Col-

leges, but these are more conspicuous in the catalogue than in the life of the undergraduates. The Senior Colleges especially are a sort of legal fiction, for the students hasten through or skip them, in order to enter the professional schools and are reluctant to enter them. The title of "Associate," which is conferred on completion of the Junior College, is not esteemed sufficiently valuable to induce the students to clear up all their back work in the lower Colleges as promptly as they might.

It is upon the organization of the Junior Colleges, comprising the first half of the undergraduate course, that attention has been chiefly concentrated. For the last five years this question has been actively, even passionately, discussed. According to the present plan there is a double division of this part of the student body, by courses and by sexes. This gives eight groups, known specifically as Arts College (men), Arts College (women), Literature College (men), Literature College (women), Philosophy College (men), Philosophy College (women), Science College (men), and Science College (women). These groups are supposed to form social units and to compete with each other on the forum and the field. Various schemes have been tried to bring about the desired differentiation and integration, to make these clans "class-conscious" and to induce a proper degree of antagonism between them, but without much success. The students prefer their own groupings, to form according to the undiscoverable laws of congeniality and affinity rather than to conform to the artificial system imposed upon them by the authorities. They follow their own system of crystallization, and the Colleges are but pseudomorphs. A Scientific man, when off duty, sometimes prefers to associate with Literary men, or even with Literary women, rather than with those of his own totem.

In order to see how this sectional plan was working, I attended one of the college meetings on my recent visit to

Chicago. The only thing done at the meeting was to listen to a lecture on the Philippines. It was an interesting lecture, — Professor McClintock is always interesting, — but why should students who had been attending lectures all day attend another for recreation? This, however, seems to be a natural instinct, such as leads farmer boys, who have been working hard all the week, to play baseball when they come to town on Saturday, and leads New Yorkers, who have been jolted in trolley cars all the week, to go to Coney Island in order to be worse jolted on a scenic railway. But I could not see how attendance on this particular lecture promoted social unification any more than any other, or why — since Professor McClintock uttered no words that would bring a blush to the cheek of the tenderest maiden — it was necessary to insist on the separation of the young men and women who a few hours before had been sitting side by side in that room listening to a chemistry lecture.

The inequality in the size of the colleges and the shifting about of students interfere with the clear definition of these subdivisions. In the autumn of 1907–1908 the Colleges varied in size from 34 in the College of Arts (women) to 182 in the College of Science (men), and five sixths of the students originally registered in the College of Philosophy (commerce and administration) changed their registration to the course in Literature.

In short, the horizontal division of the university into Junior and Senior Colleges has been practically accomplished, but the perpendicular subdivision of these into eight Colleges has not been successful, probably because the natural cleavage planes have not been hit upon. It is very fortunate for the university that President Harper was thwarted in his effort to make this system rigid and permanent by embodying it into the architectural plans for the new quadrangles. Buildings constructed and arranged for this purpose would now, only five years after the system was

adopted, be quite inadequate and inconvenient. These plans are still held up, and it is to be hoped that they will be until their objectionable features, especially these segregated colleges, with their independent classrooms and laboratories, are eliminated.

The influence of English ideals became increasingly dominant during the later years of President Harper's administration, and this plan for independent college quadrangles was one of its manifestations. There is, of course, no valid objection to the introduction of any foreign customs which can be profitably acclimated, only we have to look out that we do not get gypsy moths and sparrows with them. Many of our best educational policies were made in Germany, and we imported with them nothing worse than beer. England gave us athletics, but could not give us their palliative, the true spirit of amateur sport. At present Princeton, Harvard, and to a lesser extent Chicago are taking the English universities for models, as Michigan and Johns Hopkins formerly took the German. There is, however, this difference. We borrowed from the German universities their educational ideals, which were those of freedom and equality and industry. We are borrowing from the English universities their social ideals, which are those of exclusiveness and aristocracy and leisureliness. The particular thing that we are most anxious to get from Oxford and Cambridge, their separate residential colleges, is what the reformers in these universities are most anxious to break up. They fear that if they do not succeed in getting the system materially modified before long, a parliamentary commission will do it by force. The younger English universities, like London, Manchester, and Leeds, envy their venerable rivals many things, but they are glad to be free from the college system.

The undergraduate body in our great universities has become so large that some new form of social grouping is

necessary, and this is likely to be based on the house unit. The fraternities have so far been most successful in solving this question by their chapter houses containing a small but diversified group. In the University of Chicago fraternities are allowed, but not sororities, a curious discrimination since, as I have shown in previous chapters, the sororities have been mostly free from the recognized evils of the fraternities.

The university at the start established residential halls or houses in spite of the prejudice against them at that time prevailing in the West, on the ground that they were medieval, British, and aristocratic institutions. These houses have gone through many vicissitudes, but on the whole have justified their existence and proved themselves valuable, even indispensable, factors in university life. The system might have been extended and many more of them have been now in successful operation if the plan had not been made to apply to instruction as well as residence and to involve the segregation of the women on a separate quadrangle.

As originally presented the proposal read: —

"Will the Senate advise the trustees of the university to accept a gift of a million or a million and a half of dollars, to be used in erecting, on a separate block of land, dormitories, gymnasium, club house, assembly hall, recitation halls, and laboratories, to be used exclusively for women, and, as concerns recitation halls and laboratories, by women in the Junior Colleges?"

The financial part of the proposition was subsequently eliminated because the president and trustees came to the conclusion "that a mistake had been made in coupling the question of a gift with a question of so much educational importance, inasmuch as it was feared that some might actually believe that the university had permitted the decision of an educational question to be influenced by the probability of a gift for that purpose, which might not be

secured for another purpose." It must be confessed that the coeducationalists were rather illogical in resenting the form of the question. The women had to buy their way into Cornell and Johns Hopkins Medical, and there was no reason for them to be offended, even though, as they too hastily assumed, this hypothetical proposition were an attempt to buy them out of Chicago. After a hot discussion and several reversals and reconsiderations, such as faculties everywhere are prone to indulge in, it was finally voted to have masculine, feminine, and mixed sections in the Junior College courses.

The plan has been in operation now for five years, and probably both parties wonder why they got so excited over it. The ardent young misogynists from the East, who supported the movement in the hope of soon freeing the campus from the taint of woman's presence, have been disappointed. So have the champions of woman's rights in education who feared that this was the entering wedge which would split the university in two. The segregation movement has made no progress. In fact, the proportion of segregated work has declined from year to year. Neither the young men nor the young women show any marked tendency to avoid or to seek the mixed classes. They take what studies they want without much regard to who are in the recitation rooms. Only about five per cent of the Junior College students have all three of their courses segregated. About one half of the first-year students and a very much smaller proportion of the second-year students are affected by the system. These take from one third to all of their work in classes divided on sex lines. Above the second year there is no segregation, except such as results naturally from vocational election. As the matter stands now the student, who has usually been prepared for the university in coeducational schools from the kindergarten up, has for part of the first two years some classes from

which the opposite sex is excluded, and then passes on to the Senior College, where no such distinction is drawn. It is questionable whether this brief break in training is worth the trouble and embarrassment it causes, and whether it does not create the evil it is supposed to relieve, that is, sex-consciousness and constraint. I was told by one of his close friends that Dr. Harper, shortly before his death, expressed his deep regret at having been persuaded to take up the segregation policy, and said that it had caused him more trouble and annoyance than any other act of his official career.

The character of the work done in the segregated and mixed sections shows no important differences, though there is the same difference between the sexes in the quality of work done as there is everywhere. In the Junior College, as a whole, the proportion of men failing, wholly or partly, is twice as great as of women.[1] At the top of the class, as at the bottom, the women stand higher than the men, getting twice the honors to which their numbers entitle them.[2] This was formerly accounted for by saying that the few women who went to college were superior in ambition and ability, while the young men were the average run, but since President Harper, in his argument against coeducation in the Junior College (1903, vii, 1, *c.*), said that conditions had changed in this respect, some other explanation should be sought. One often proffered by professors, that the grades do not really indicate the knowledge and proficiency of the students, is interesting as a confession, but hardly satisfactory as an explanation.

An ingenious system of marking has just been adopted at

[1] From 1904 to 1908: failed, men, 13.6 per cent; women, 5.8 per cent; conditioned, men, 19.2 per cent; women, 11.2 per cent.

[2] In 1906, 43 per cent of all the women and 19 per cent of all the men received honorable mention on graduation, and 20 per cent of the women and 9 per cent of the men received honors for special excellence in particular departments of the Senior College.

Chicago for the purpose of raising the standards of scholarship. Although the students probably work harder here than at most Eastern universities, it is felt that they were not doing what they should, especially in the College of Arts and Literature. Hereafter a student will have to do more than passable work in his studies in order to pass. He must accumulate "honor points" to double the number of his courses. That is, 36 Majors and 72 honor points are required for graduation. The scale is as follows: —

Grade	Significance	Honor Points
A	Excellent	6
B	Good	4
C	Fair	2
D	Barely passable	0
E	Conditioned	—1
F	Failed	—2

This is in accordance with the scriptural principle that "unto every one that hath shall be given, but from him that hath not shall be taken away, even that which he hath." If a student does not do fair work on the average, he will find himself a minus quantity, being automatically graduated out of the university at the bottom. One effort in the same direction is the greater strictness in enforcing the requirement of making up all Junior College work before entering the Senior College, or "the rule against the forward pass," as it is called in student vernacular. There has been a continuous tendency from the beginning to curtail freedom of election until now a student who wishes to make a professional school in the shortest time has practically to follow a rigidly prescribed course.

The University of Chicago was fortunate in starting unencumbered with the student customs of our boyish grand-

fathers. There has been practically no hazing, class fighting, face painting, hair cutting, kidnapping, stealing of chapel bell clapper, mobbing of professors, or similar student activities, and there are, I believe, no organized associations for the cultivation of hard drinking and the promotion of vice. Nevertheless the students seem to be as contented and happy as anywhere, so perhaps these things are not so essential to collegiate life as they are elsewhere supposed to be. Athletics have been kept on an unusually high plane by the redoubtable Mr. Stagg, without loss of efficiency, and yet do not absorb the attention of the student body so exclusively as at some other institutions. Music and dramatics are cultivated by the students in much the same way as they are everywhere. Public speaking and debating have been given unusual prominence in the curriculum, but are not, I think, so popular as voluntary exercises as they are in some of the State universities. Literary propensities do not seem to be so spontaneous and irresistible as one would expect in an institution of its size and character and location. There is no literary magazine published by the students. I asked one of the officials of the university why not, and he said it was because the students wrote so well that their articles were accepted by the Eastern magazines. There is no comic weekly published by the students. I asked an official of another university why not, and he said it was because the University of Chicago was funny enough without it. These two explanations may be, and I hope will be, taken for what they are worth. The faculty cannot be held responsible for the comparative lack of literary ambition among the students. The English department has, it is true, been inclined to lay more stress on the linguistic than the literary side, but it also has had more men who could do original work in English — using the phrase in its true sense — than one commonly finds in universities; for example, Professor Herrick, who can write

novels that sell, and Professor Moody, who can write plays that pay.

The architecture of the University of Chicago, considered as a whole, is superior to that of any other university. There are individual buildings at other places which are finer than anything at Chicago, but nowhere else so harmonious and satisfactory a group. The architectural plans for all future buildings, so far as could be anticipated, were drawn up before a foundation stone was laid, and although the growth of the university has surpassed even the audacious imaginations of the founders, yet the general design and arrangement has proved flexible enough so that no discordant variations have been introduced. The university has gradually picked up property in the neighborhood until now it owns the land on both sides of the Midway Plaisance from Washington Park almost to Jackson Park, so that this mile stretch of greenery between two spacious playgrounds forms virtually the campus of the university, an unrivaled site for a city institution. Here, when the university opened, the American people were celebrating their discovery by Columbus in various fantastic ways. But the place has sobered up since then. The Ferris wheel has long since rolled away and the Haskell Oriental Museum has taken the place of the Streets of Cairo. But the Columbian Exposition aroused in the West a new enthusiasm for good architecture, so the Gray City owes much to the White City that preceded it although its plans were made before the exposition. Most of its buildings have been gifts and memorials and as such could properly be made beautiful without stopping to consider, for example, whether a pinnacle could be afforded on Mitchell Tower when Professor Williston wanted the money for a pterodactyl, or to decide between the educational value of a gargoyle on the roof and a traveling library on the road. The buildings are on the whole convenient and well adapted to their respective purposes, and no

serious sacrifices have been made for architectural effect. The later buildings have been imported from England, though not in such a way as to be dutiable under the art tariff. .Hutchinson Commons, the men's dining room, is a copy of Christ Church Hall, Oxford. Mitchell Tower is taken from Magdalen. The Law Building follows closely the chapel of King's College, Cambridge. If our architects are incapable of originating, it is at least creditable that they can select such good models and imitate them so admirably. It gives the university two rooms hardly to be matched in America, the commons hall and the departmental library; the latter, occupying the upper floor of the Law Building, is 160 feet long, 50 wide, and 40 high. If any criticism is to be passed on the Chicago buildings, it would be that they are too conventional and imitative. The new buildings of the College of the City of New York, for all their exasperating deckel edges, have in them, it seems to me, more of the genuine Gothic spirit, its freedom, its daring, its caprice, its joy of living.

The central edifice of the south façade facing the Midway will be the Harper Memorial Library, for which $814,000 has been raised by a general subscription. Of this $200,000 will be set aside as an endowment for keeping the building in repair, a wise precaution which university authorities generally overlook. This building is very much needed, for no great university, not even Harvard, has had more inadequate library accommodations. The University of Chicago began its library by buying out a Berlin book-shop, the Calvary collection, supposed to contain 280,000 volumes and 120,000 pamphlets, but the stock had been pretty well picked over and proved somewhat disappointing both in numbers and quality. The university library is now approaching the half million mark, and students have also the advantages of three other big libraries in the city, the Newberry, the Crerar, and the Public. On account of the

somewhat inefficient management of the general library and the lack of a central building, the departmental system has grown up in the University and has become so deeply rooted that it will be difficult to change it. Professors have become used to having all their books handy, and students delight to browse around the open shelves, hitting on books they have never heard about and never would get at through a catalogue. The losses under this régime are not serious. As indicative of the attachment of the Chicago students for good literature it may be noted that more volumes are missed from the divinity library in the course of a year than from any other.

The University of Chicago does not look its age. It looks much older. This is because it has been put through an artificial aging process, reminding one of the way furniture is given an "antique oak finish" while you wait by simply rubbing a little grime into the grain of it. I never understood why this policy was adopted. It could hardly have been for popularity, for your wild Westerner likes things brand new and shiny and smelling of varnish. And he has a prejudice, quite unjustifiable though inherited legitimately enough from the Declaration of Independence, against all things British. But one thing leads on to another. The antique buildings had to have furnishings to match; such, for example, as the chandeliers in the law library with porcelain candles, and the massive lanterns, not giving light but lit up very prettily on the outside by electric bulbs. With the buildings and the furnishings came the caps and gowns in colors and designs unrecognizable by Mr. M. A. Oxon, but nevertheless fine examples of the pseudoantique, and serving to give visible emphasis to the already exaggerated distinction between men who have certain degrees and men who have them not. The gowns should, however, be made thicker, or the outside world may see through the pretentiousness of the pretense. The University of Chicago

carries, I think, its ritualism farther than any other American university. It has not as yet a golden mace like Yale, but on the other hand it requires academic costume for both examiners and candidates on the occasion of doctors' examination, which is not the custom elsewhere so far as I know. This devotion to ceremony is particularly curious in a Baptist institution when we consider what iconoclastic and radical folk the Baptists were in their early days. Baptist orthodoxy is unconventionality.

This raises the question of whether the University of Chicago is a Baptist institution. The Carnegie Foundation says it is, basing its decision on the stipulation that two thirds of the trustees and the president must be of that denomination, the one clause of the charter stated to be forever unalterable. But on the contrary the hard-shell brethren say it is not a Baptist institution but decidedly heretical and dangerous. In short, the university is too orthodox to get the Carnegie pensions — I beg your pardon, retiring allowances — and too heterodox to get the unanimous support of the denomination. To pursue the middle course is most perilous, but usually wisest. Certainly it has proved so in this case. Whether Baptist or not in the technical sense, the university has been profoundly Christian in the best sense. Yet no creedal restrictions have been imposed upon the professors, and the faculty contains representatives of most of the Christian denominations as well as Jews, Neo-Pagans, Cynics, and members of those solipsistic sects common nowadays when every man may be his own heresiarch. The university on its reincarnation in 1892 took over the theological seminary of the Baptist Theological Union and converted it into a Divinity School of true university grade and scope, supported by the strong Semitic, Greek, philosophical, and sociological departments of the rest of the university. The proportion of non-Baptist students in the Divinity School has been of

late over 50 per cent, and is increasing. It is, of course, inevitable that a theological department sharing the life of a great university should tend to become less narrowly denominational.

But the service of the university to Christian education, as to education in general, has not been confined to what is done within its walls. By means of its periodicals and extension courses, it has cultivated in a large part of the country a spirit of more thorough and conscientious study of the Bible and introduced improved methods of teaching it. More than any other university, I think, it has recognized that the great religious need of the day is the reconstruction of theological conceptions and their reëxpression in a form acceptable to the intelligent man of to-day. The frank recognition of this need and the courageous effort to meet it have brought much obloquy upon the university from those who did not see the necessity or the possibility of such constructive work. But the university has stood by its theological professors, even where their utterances were too conservative or too radical to be approved by the faculty as a whole, and has not restricted their freedom of speech.

I believe the same can be said of the only other department of university work in which the public is enough interested to find fault, that is, the department of sociology and political economy, notwithstanding the widespread opinion to the contrary. I doubt if any other university in the country, State or endowed, has produced a body of literature containing franker criticism of existing industrial and social conditions or more radical suggestions for their reform than the publications of the University of Chicago. If any of the professors have failed to give adequate expression to their feelings in this respect, I think it must have been because of the limitations of the English language rather than from an undue regard for the sensibilities of the

wealthy patrons of the university. Indeed, I am inclined to think the effect is the other way. There is a piquancy, a dramatic thrill, about circulating radical views of sociology in a periodical bearing the imprint "Founded by John D. Rockefeller," or about uttering heresies while standing in front of the portrait of the richest Baptist in the world, and it takes a strong character to resist the temptation. The real strongholds of conservatism, of dumb and stubborn reaction, theological and sociological, are not the great universities, but the small country colleges narrowly watched by the devoted alumni and everybody else for a hundred miles around. The general public is rightfully suspicious of any attempt at restriction of freedom of speech, but like a jealous wife it is apt to be wrong about the object of its suspicion. There are antidemocratic tendencies observable in our universities, but they are, in my opinion, due to the growth of the spirit of luxury, caste, exclusiveness, and arrogance, and not to any conspiracy of millionaires.

The University of Chicago, starting late in a territory where universities, or institutions bearing that name, were already excessively numerous in proportion to the population, acted in accordance with the maxim that there is always room at the top. Graduate work seventeen years ago was but feebly and surreptitiously cultivated in the State universities and scarcely at all in the denominational colleges of the West. The University of Chicago, by laying special stress upon research and advanced work and giving opportunity for it in the summer quarter, became virtually the graduate department of these institutions. It is not uncommon to find colleges in which half or two thirds of the faculty have studied at Chicago. The State of Texas alone sends 150 students. Every year the Texas students charter a special train for the University of Chicago. I should explain for the benefit of Eastern readers that this is the same geographically as if 150 Italian students came



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LAW SCHOOL. EAST VIEW.



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HULL BOTANICAL LABORATORIES.

every year to Oxford. That would be alluded to by London leader-writers as "an epoch-making movement in education." So is this. It must also be remembered that the University of Chicago uses the post office and the printing press and keeps a corps of educational missionaries in the field. During the year 1908–1909 the extension lecturers gave courses of six lectures each in 125 different cities and towns in fourteen different States. And this was a poor year compared with the preceding. The extension work was started by Professor Richard Green Moulton, who was brought from Oxford for that purpose, and his courses in English and Biblical literature are still the most popular. The reason for it is that he recites poetry as though he loved it, not as though he wanted to tear it to pieces. The number of students taking regular work by correspondence is 3200, about double what it was five years before. The most popular correspondence courses are English, Mathematics, History, and Latin.

In all these ways, and many others too indirect to trace, the University of Chicago has perceptibly raised the educational standards of the West and South. The effect is most noticeable in the South, because until the University of Chicago was opened Southern teachers had not been going to the great universities in large numbers, and Southern colleges and secondary schools, through an excessive local pride, had not drawn upon the Eastern universities for their instructors so freely as had the Northwestern institutions. I think it is safe to say that no other university has exerted such an uplifting influence over so large a part of the country in so short a time.

Its success appears the more remarkable when we realize that it was surrounded by the foremost State universities which had in their favor State pride, free tuition, and close connection with the public-school system. They were enterprising and accommodating, ready to provide the

kinds of training most in demand. The University of Chicago achieved its success, first, by manifesting a still greater originality and adaptability, as in summer work, extension courses, and the use of print, for example, and, second, by rising above the zone of competition in giving more advanced work in pure science and the humanities. Now some of the State universities are learning how to beat Chicago at its own game, and if Chicago would maintain its primacy, it must be by the methods used in its early achievement; that is, the university must show the same daring and initiative as in the beginning, and it must find a way to draw from any part of the world men who are recognized leaders in modern thought and investigation. It ought to be easier to get distinguished men now than it was at first, when the university had no prestige and Chicago was regarded as beyond the habitable frontier. If rumor is to be relied upon, the list of those who have declined calls to Chicago would be even more illustrious than its present faculty roll. Perhaps the same is true of other institutions. If so, it is greatly to the credit of their presidents.

The University of Chicago has now the largest number of graduate students of any American university except Columbia. It stands at the head of the list in the number of doctorates conferred in the last twelve years (448; Columbia, 436; Harvard, 418). The mere catalogue of the books and papers published by members of the university during its first ten years occupies 180 quarto double-column pages, constituting the second volume of the "Decennial Publications of the University of Chicago." These twelve volumes contain a series of papers, representative of the researches of the different departments, which it would be difficult for any of the older universities to match in value and variety. The first volume of this publication, giving the history of the first decade, could also be called the record of

a piece of original investigation, a laboratory notebook of experiments in methods of university administration, set down with a frankness and clearness unusual in such official documents. The development of the various departments of the University of Chicago has been unequal, but not one-sided. It was President Harper's policy to develop a few departments as schools at a time, leaving the others comparatively neglected until he found the men and money to put them on a level with the best in the land. Consequently the appearance of the campus in the early days was symbolic of the faculty. The visitor would see there a venerable Gothic edifice flanked by another much newer and with one side unfinished, and beyond a low brick temporary structure, and then a vacant lot of weeds and brambles. President Judson has made it his especial business to fill in the outlines of the great plan and to promote an even, steady, and symmetrical growth of all departments. The machinery of administration has been simplified, and the burden of faculty meetings, committee work, and complicated reports has been alleviated. Life is more calm and peaceful than under the old régime, and revolutions are not so common. In short, the two administrations stand in somewhat the same relation to each other as do the administrations of Presidents Roosevelt and Taft.

The growth and dominance of the graduate school at Chicago is due to the fact that President Harper put the advancement of knowledge foremost among the functions of a university. He established the University Press as one of the equal and coördinate branches of the institution. He started or annexed a large number of scholarly journals, and expected his faculty to fill them. He selected men who were inspired with the zeal for research, and they in turn picked from the throng of mature students passing through the summer quarter those who were capable of receiving this inspiration. If the proposal of Dean Small

to abolish the tuition fees of graduate students after their first year is put into effect, the influence of the school will be greatly extended, provided, of course, that men of originality and power are there to attract and hold the students.

The graduate school is divided into two parts, the School of Arts and Literature, and the Ogden School of Science, and the number of doctorates conferred by the two schools has kept nearly equal. The mere enumeration of all the different lines of investigation now being carried on would be impossible here, but it may not be improper to mention a few merely as samples. Professor Breasted is excavating the ruins on the Nubian Nile. Professor Starr collects tongues and heads from the Philippines and the Kongo. Professor Chamberlain is dissatisfied with the way Laplace constructed the solar system, so he has taken it apart and is putting it together in accordance with modern American methods of building, using planetesimals mixed in the cold, a kind of concrete construction, I take it. In the nine years since the Nobel Foundation was established, thirty-three persons have received its prizes for scientific discovery, but only one of them lives in America. This is Professor Michelson, whose echelon spectroscope and interferometer have carried the analysis and measurement of light waves to an unprecedented degree of refinement. Astronomy early received a magnificent equipment through the generosity of a Chicago street-car man under the influence of Dr. Harper's hypnotic suggestion. The Yerkes Observatory is located on a high hill overlooking Lake Geneva, seventy-six miles from Chicago, and contains a refracting telescope of 40-inch aperture, which is four inches larger than the Lick telescope belonging to the University of California. The Kent Chemical Laboratory has from the start been one of the most productive departments of the university, both in papers and men. Professor Nef has got into the habit of astonishing the world once a year

by promulgating an original theory of organic synthesis and then astonishing it still more by backing up the theory with a hundred pages of solid experimental work in *Liebig's Annalen*. Professor Stieglitz is one of those very rare individuals who have an equal mastery of the laboratory and of the lecture room, and who are able to direct research and elementary students at the same time without neglecting either. When the Hull Biological Laboratories were going up, graduates from "universities" where one man taught all the natural sciences without overworking himself, used to wonder what these four great buildings marked Zoölogy, Anatomy, Physiology, and Botany, were needed for. Now they know, if they are still about the campus, for all the buildings are crowded, especially since the affiliation of Rush Medical College. The fundamental branches of the first two years of the medical course are given in the Hull and Kent Laboratories, and the clinical work of the later years at the down-town buildings of Rush.

On account of the presence of the theological school such studies as comparative religion, Hebrew, Arabic, Assyriology, and Biblical Greek have been prominent and productive from the beginning. The Germanic department has always been stronger than the Romance. The classics lost three good men last year, but they cannot be said to be weak while Professor Shorey is at the head of the Greek and Professor Hale at the head of the Latin department. The University of Chicago was one of the first to give the social and political sciences the attention which they deserve in modern education, and these courses have been among the most popular, both with resident and nonresident students. It is sufficient to mention the names of Professors Laughlin, Judson, Small, Vincent, and Thomas to indicate the character of the work. Reference should be made here to the efforts now being made to give the undergraduates practical training in the new or rising vocations

of political and business administration. Professor Hill has started an Agricultural Guild, to combine theory and practice and turn out men capable of managing large farms and making them pay, and he is engaged in promoting a plan of coöperative agricultural production adapted to a particular community. There is a College of Commerce and Administration for those who intend to engage in banking, journalism, transportation, trade, or industry, or who seek a consular or commercial career in South America or the Far East. There is a College of Religious and Social Science for those who propose to devote themselves to what might be called the business of applied Christianity, such as the management of religious, charitable, and philanthropic organizations. It is another instance of the paucity of the academic vocabulary, to which I have often referred, that no better title has been found for these future bankers and Y.M.C.A. secretaries than Bachelors of Philosophy, the same degree given with no more appropriateness to the students of literature. And why do our universities call journalism one of the commercial professions?

The University of Chicago has few Latin-American students compared with Pennsylvania or Cornell, but has many Japanese and Chinese. The number of the last is likely to be greatly increased in the future because of the interest which the university is taking in Chinese education. Professor Chamberlain and Professor Burton — apparently representing science and religion — were sent last year to China with a competent corps of assistants to investigate the possibility of establishing in one of the provinces a great university, or, rather, an educational system leading up to and including a university. Their plans have not yet been made public, and it would be unprofitable to discuss the newspaper rumors of the many millions which are to be given for its endowment, since newspaper information about

the University of Chicago is notoriously unreliable. Here, however, is an opening for university extension on an unprecedented scale, and it should, therefore, be an especially enticing field to a university like Chicago. The university now gives instruction in elementary and advanced Chinese and Japanese.

The university would be more attractive to foreign students if it had schools of applied science, and this, indeed, is its most conspicuous deficiency. Of course, the State universities close by give excellent opportunities for such training, but technology is needed by the university itself, if for nothing more than to correct the tendency toward abstraction and aloofness which is inevitable where studies are pursued without regard to their application to the problems of actual life. At one time it was expected that the Armour Institute of Technology would be affiliated with the University of Chicago, but the negotiations were broken off at the last moment. The objections raised were, I believe, similar to those which prevented the annexation of the Massachusetts Institute of Technology to Harvard.

I have left the School of Education till the last for two reasons; first, because I felt that it was one of the most important branches of the university, and, second, I did not know exactly what to say about it. I could write for hours about the influence of that band of devoted disciples whom Professor Dewey collected about him and then dispersed throughout the West carrying a new educational gospel. I could say as much about those who acquired a similar inspiration, though a different philosophy, by sitting at the feet of Colonel Parker. But Colonel Parker is dead, and Professor Dewey has gone to Columbia, and it would require a Mendel to determine what characteristics are dominant and what recessive in the institution which resulted from the union of these two schools. Besides, it is

now at a critical point in its career, and what would be true of it to-day would not hold good to-morrow. The School of Education might, in fact, bear a sign board such as we see on restaurants, "Under entirely new management. No connection with over the way." For Professor Judd has come from Yale to take charge of it, and the school has led a somewhat independent life and has developed a different mode of thought from the rest of the university. For example, manual training, handicraft, and applied art are the prominent features of the training in the School of Education, from its kindergarten up through its high school, but when its pupils enter the university — if they do — they find themselves in a different atmosphere, where neither the fine arts nor the applied arts are cultivated. Then, too, the School of Education retains a readiness to experiment, to strike out on new paths, which the rest of the university has, it seems to me, partly lost. The University High School and Elementary School are regarded as educational laboratories, not as "model schools" of a fixed and perfected type, like the Horace Mann School at Columbia.

There has been a disposition observable in the professors to look upon the training of the teachers as beneath the dignity of a university, and those in other departments took little interest as a rule in the work of the School of Education. Recently, however, there has been a change in this respect. The importance of the department to the university is more generally recognized, and some of the leading members of the faculty are devoting especial attention to the problems of secondary education. Professors Mann in physics, Smith in chemistry, Slaught, Young, and Myers in mathematics, for example, are advocating very radical reforms in the teaching of these subjects. It is generally conceded that a year or more could be saved in the period of college preparation by more

efficient methods, but these have yet to be worked out. The custom of Eastern institutions, especially Harvard, has been to stand off and scold the secondary schools for not sending them better prepared students. Some of the Western universities, especially Chicago and Wisconsin, are looking at the question from the stndpoint of the secondary schools, and are trying to help them do better work, not only with the pupils being prepared for college, but with the nine tenths who do not go on to college. If this can be accomplished, the University of Chicago will have made another important contribution to American education.

NUMBER OF STUDENTS IN THE UNIVERSITY OF CHICAGO SINCE ITS FOUNDATION.

Four Quarters of the Academic Year	Graduate	Undergraduate	Divinity	Medical	Law	College of Education	Total [1]
1892–93	217	323	204	—	—	—	744
1893–94	297	482	119	—	—	—	1098
1894–95	493	772	281	—	—	—	1546
1895–96	648	962	321	—	—	—	1931
1896–97	717	1078	337	—	—	—	2132
1897–98	875	1293	371	—	—	—	2307
1898–99	951	1799	336	—	—	—	2959
1899–00	1008	1904	394	—	—	—	3183
1900–01	999	2347	372	—	—	—	3520
1901–02	1032	2439	382	325	—	701	4550
1902–03	1065	2480	406	302	78	526	4463
1903–04	1068	2480	405	292	125	505	4580
1904–05	1091	2519	344	253	160	628	4598
1905–06	1120	2904	361	281	204	680	5079
1906–07	1176	2726	418	270	234	779	5070
1907–08	1226	2558	393	306	265	749	5038
1908–09	1416	3003	397	319	303	958	5659

[1] Deductions made for double registration.

CHAPTER XIV

COLUMBIA UNIVERSITY

THE first thing that the visitor sees as he approaches Columbia University is the great gilded statue of Alma Mater, a modern interpretation by Daniel C. French of the figure on the seal. An old, old book is spread open upon her lap, but her eyes are not directed down upon it. She is looking straight before her into the heart of the big buzzing city to the southward, while her open-handed gesture suggests that she regards knowledge not as something to be hoarded and hidden, but as something to be scattered as freely as possible to the world. The building to which this figure welcomes the visitor is the low-domed, ten-pillared library, a storehouse and workshop combined, dominating by its position and beauty all the other buildings of the group. If the visitor, keeping to externals, skirts the library instead of entering it, he will find on one side St. Paul's chapel bearing as its sole decoration the sculptured forms of cherubim. As he passes on through the campus past the gymnasium, he comes finally to the statue of Pan, by George Barnard, stretching out his gigantic limbs behind the trees and bushes. Here is nothing of the clear-eyed intellectuality of Alma Mater, nothing of the unworldly innocence of the cherubs, nothing but sheer animality, the love of outdoors, the delight in tough sinews and thick thews, a fondness for aimless movement and senseless sensation. So the visitor, forming his opinion after the manner of his kind, from casual first impressions, comes to the conclusion that at Columbia University all the three elements of man's nature are recognized as essential, but intellectual culture is



NICHOLAS MURRAY BUTLER,
President of Columbia University.

in the foreground, religious culture at the side, and physical culture in the background. In this he would not be so far out of the way as those who judge by superficialities are apt to be. Columbia, unlike most of the old universities, inherited no theological department; but to correct the deficiency it has welcomed the association of several theological seminaries. The Great God Pan, far from being dead, now rules many a college and robs Athena of her worshipers. But Columbia is not one of those institutions where the stadium is larger and more frequented than the library. In fact, there is no stadium at Columbia, though there is promise of one in the future to be built out into the Hudson from Riverside Park, giving unequaled opportunity for witnessing land, water, and air sports.

It would be well if the promoters of the Neo-Pagan revival would show better judgment in what classical customs they introduce. For example, our colleges could with advantage adopt the original Spartan rule that no man be allowed on the athletic field except those taking part in the exercises. But we are more Roman than Spartan nowadays, and the only thing to do is to make the best of it. If we cannot eliminate the spectacular element in our athletics, we can control it. Most university authorities think we cannot, but Columbia has demonstrated that we can by abolishing its most extravagant manifestation, intercollegiate football. None of the other great universities has yet followed this example, but I have learned in many of them that President Eliot's words and President Butler's action have strengthened and encouraged those who are striving to maintain a proper balance between the intellectual and the physical life of the students, and to put Pan in his proper place.

When this country gets settled up and settled down, the cities will find that they cannot all be metropolises, and the universities will cease to aspire to preëminence in all things.

How many universities of the highest grade the country can then support, and where they will be situated, cannot be foretold. I have heard the theory advanced that there will ultimately be four universities in the front rank, and that they will be Harvard, Columbia, Chicago, and California, if these universities improve their advantages of position and prestige. This would certainly be a symmetrical distribution, but the theory ignores the recent developments of the State universities of the Mississippi Valley and the possibility of a national university at Washington, which the State universities are anxious to see established. It is, however, apparent that the universities in large cities have a decided advantage over the others. The balance of power among German universities has been disturbed by the rise of Berlin, while in France it is found difficult to prevent the University of Paris from getting a monopoly of higher education. London University, young and chaotic as it is, seems likely to go ahead of Oxford in the near future. The pull of the city is as irresistible in educational circles as on the country population as a whole.

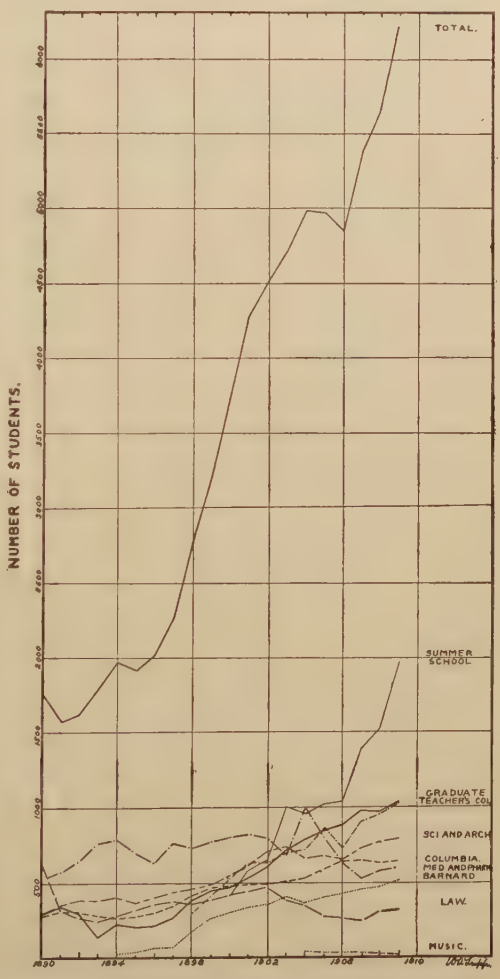
All colleges draw most of their undergraduate students from their immediate environment, so the city college has the primary advantage of a large tributary population well supplied with preparatory schools. As wealth becomes concentrated in the cities, the institutions there located have the best chance at catching the crumbs which fall from the rich man's table, including sometimes a generous tidbit. The more highly specialized the work of the university, and the more closely it is connected with the work of the world, the more necessary are the urban facilities. The medical men need hospitals and sanitary establishments. The students in architecture, art, and music require museums and operas. Lawyers, economists, sociologists, all who are studying that branch of zoölogy dealing with the habits of the political animal, seek the localities where they find



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the greatest abundance of specimens. It is easier in the cities to get men of eminence in the several professions to devote at least a part of their time to academic duties. An engineer who is good for anything can make more than his salary by utilizing odd hours and vacations. His literary colleague finds it advantageous to be in close touch with editors and publishers. Still more important perhaps is the opportunity of association with men who are concerned with art, letters, and science in other than a pedagogical way. In a small college town a professor finds his cultured associates almost exclusively in the faculty clique, and they, being absorbed in diverse lines of study, have nothing in common to talk about except shop. Naturally he comes to think that all the world's a school and all the men and women merely teachers.



ENROLLMENT OF STUDENTS IN COLUMBIA UNIVERSITY, 1890–1910.

It may be argued in favor of the country college that living is cheaper, that the buildings are less crowded, that the opportunities for outdoor exercise are greater, that the life of the students is more unified and under closer moral control, and that there is less to distract the attention and dissipate the energies than in the city. All of which is true, though the value of these arguments, especially of the last, is being questioned. There is probably more hard and continuous thinking, and that, too, on recondite subjects, going on now in the cities than in the country. A man who will decline a box at the Metropolitan Opera, a free ticket to a Hotel Astor dinner, or a chance to speak to a Carnegie Hall audience in order that he may devote another evening to his study of the dative case in the third declension, has thereby demonstrated the possession of the first qualification for successful research, concentration of purpose. At any rate the trend now is toward the city, and while it is likely that undergraduate work of two years or more will be carried on chiefly in local colleges and high schools, the higher grades of professional training and of research will be done in universities in or close to the great centers of population.

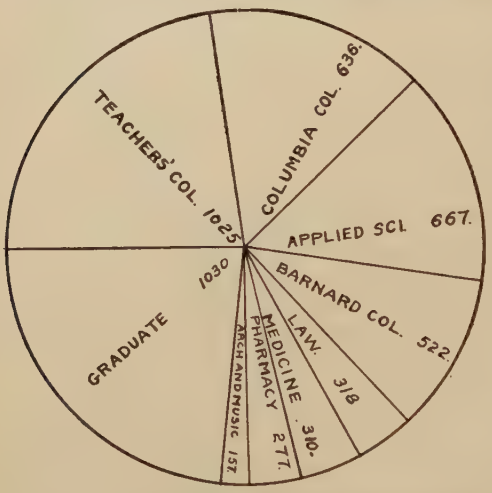
Columbia, situated in the largest city, has the best chance to become the greatest of American universities — and it is improving the chance. It is distinctly a city university and distinctly a New York City university. As the University of Wisconsin has blurred its outlines by dissolving itself in the State, so Columbia University is willing to lose somewhat of its identity and distinctiveness through merging itself in the city in order that it may most fully share its life. It is as impossible to trace the boundaries of Columbia as it is to define the limits of the metropolis. Its influence permeates the city through thousands of unofficial channels, too numerous and too delicate to follow.

The University of Chicago is different. Although it is

about the same distance from the center and from the edge of the city as Columbia, it is not so much a part of it. It has little of Chicago about it except its name. Its buildings by their architecture and arrangement seem contrived to give the effect of a cloister in a city. It draws close the skirt of its academic gown, as though to avoid getting it into the Chicago mud. A stranger passing along the Midway Plaisance would at once be struck by the group of buildings and inquire what it was and where it came from. On the other hand, the tourists who come up Amsterdam Avenue on the sight-seeing automobiles have to ask, "Which is it?" when the guide with the megaphone announces they are passing Columbia University. The buildings do not differ markedly from the new apartment houses surrounding them except in being somewhat more solid and rather less attractive in appearance. The University of Chicago might be anywhere; might, indeed, be expected to be anywhere rather than in Chicago, but Columbia, body and soul, is so thoroughly characteristic of New York City as to be quite inconceivable elsewhere.

Columbia, like Stanford and Chicago, has the advantage of all new buildings. When we get a little more civilized, we will realize that permanence is not in itself a desirable quality in architecture any more than it is in clothes. Substantial buildings have many advantages, but endurance is not one of them. New York has the proper spirit in this matter. It is now proposed to tear down a fifteen-story office building on Nassau Street, erected only a few years ago, and put up a new one of thirty stories. The new building will certainly be more convenient to more people and probably be more beautiful, for there has been a great improvement of late in the architecture of skyscrapers. To erect a church or schoolhouse with the design that it shall last several hundred years is a very conceited thing to do. It implies that we consider our forms of worship and methods

of instruction so perfect that they will prove adequate and satisfactory to future generations. It is to be hoped that this expectation will be disappointed. Some departments of university work are developing so that buildings put up for their accommodation twenty years ago have already become inconvenient. In the older inherited universities the dormitories force upon the students of to-day the domestic habits of their ancestors. But there is one thing worse than to live in old buildings, and that is to love them.



DISTRIBUTION OF STUDENTS IN COLUMBIA UNIVERSITY, 1909–1910.

One of the reasons why Columbia has made such rapid strides in overtaking its chief rival, Harvard, is because in moving from its down-town home on Forty-ninth Street to the new site on Morningside Heights in 1897 it left its old buildings behind and could start anew. In occupying the new campus a systematic plan of construction has been followed, as shown by the architects' models reproduced herewith. The new buildings are large, commodious, and stately in appearance, though the effect of the whole is rather monotonous, owing to an overstrict insistence on uniformity. It is not necessary and perhaps not desirable that, for example, a School of Mines should look like a Law School or a dormitory. The new mining buildings of California and Yale, constructed to fit the machinery they house and accommodate its operation, seem to me to make a

better impression upon the visitor as well as to set a better example to the mining engineers than that of the Columbia building.

The reason why I am criticizing the architecture of Columbia is because it has some architecture to criticize. The State universities as a rule have not. No other university has any building to compare with the Columbia library, constructed from plans of McKim, Mead, and White, at a cost of a million dollars, the gift of President Seth Low. It is accounted one of the ten most beautiful buildings in the United States.[1] Considered as a library, however, instead of as an architectural monument, it has certain defects; for instance, there is no place to put the books. It is already overcrowded. The books cannot be stacked together, but have to be stored in many separate rooms, from basement to dome, and in halls and archways, sometimes remaining in the packing boxes. Because of this congestion it is necessary to change the location of at least 200,000 volumes a year. The removal of the seminar rooms and their departmental libraries to Kent Hall upon its completion will give more room, but the awkward arrangement of the building will always cause expense, delay, and inconvenience in the handling of books. The simplest solution of the problem would be to put the bookstack in the central reading room, under the dome, which is better adapted to this purpose than for reading. The design of this room was probably suggested by the reading room in the British Museum, but there the catalogue and call desk is in the center and the

[1] The "Brochure Series of Architectural Illustration," January, 1900, reported, as the result of a voting contest of architects, the fo lowing ten buildings, named in the order of preference: (1) National Capitol, Washington; (2) Public L brary, Boston; (3) Trinity Church, Boston; (4) Congressional Library, Washington; (5) Columbia University Library, New York; (6) Trinity Church, New York; (7) Madison Square Garden, New York; (8) St. Patrick's Cathedral, New York; (9) Biltmore House, Biltmore, North Carolina; (10) City Hall, New York.

aisles naturally radiate from it, but in the Columbia library the delivery room is at one side and across a hall, so the circular form of the room has no advantage. The Columbia reading room also has to serve as a passageway between the classrooms, and the big dome placed over it carefully collects all sounds and focuses them upon the readers below. From a purely esthetic point of view this reading room is deserving of the highest praise. Its sixteen huge columns of polished serpentine, the white arches above them, the statues of ancient worthies standing on the balustrade and looking down on those who are toiling to emulate them, the dark blue dome, the great white moon suspended in the middle of it with unchartered craters on its surface, the stately entrance from the colonnade, all these combine to produce an effect of spaciousness and nobility. But one wonders whether architectural beauty and convenience are necessarily incompatible.

The same question arises in connection with St. Paul's Chapel. This is interesting from its frank and skillful use of brickwork, and the interior, in varied shades of brown and yellow, is a delight to the eye. It is not a delight to the ear. The speaker's words get lost in the alcoves, and, after wandering about in there for a time, come out again to heckle him. Why the building was constructed in this way it is hard to surmise. It is not allowable to suppose that it was unintentional, for the university is exceptionally strong in its departments of architecture and physics and has plenty of men capable of calculating the reflection of sound from hard curved surfaces. The only reason for the design that I can think of is its value in the liturgical service. In accordance with the provisions of the original charter of King's College morning prayers are read daily. The attendance of students is not always satisfactory, but this does not matter. The chaplain reads the service and the walls give the responses. To conclude, St. Paul's Chapel is a

work of art which any city would be proud to possess. It is very beautiful, and it is also useful, not for preaching, but for the Foucaultian experiment. Architecture receives more attention at Columbia than at other universities, but it is practiced there as one of the fine arts rather than as one of the applied arts.

The movement of Columbia to Morningside Heights and the erection of some twenty large and expensive buildings, the change of name from College to University, the growth in numbers from 2018 to 6232 are but the external signs of the astonishing vigor which is characteristic of the university. No other university, West or East, has been so completely transformed in the last fifteen years, or is now developing so rapidly. Princeton College changed its designation at the same time as Columbia, but otherwise remained essentially unaltered. The expansion of Columbia under the administrations of Presidents Low and Butler has been in university rather than collegiate lines, in the growth of higher graduate and professional work, the incorporation or alliance of various institutions, and the extension of instruction to a wider constituency.[1]

It would be hopeless for an outsider to attempt to analyze and explain the structure and administrative system of Columbia University and its connection with other cultural agencies in New York. It is like the British constitution; it ought not to work, but it does. It is a complex congeries of provinces, allies, crown colonies, protectorates, residencies, and native states. If a herald with tabard and trumpet were to call out at commencement all of the president's official positions, — the growth of ritualism may bring us to that in time, — the list would sound like the heralding of a

[1] The best account of all this is to be found in the "History of Columbia University, 1754–1904," by Professor Munroe Smith and others, published by the University Press on the hundred and fiftieth anniversary of the founding of King's College.

Holy Roman Emperor. There are schools and faculties and divisions and departments and committees; all sorts of organizations and groupings, official and unofficial, which, contrary to what one might think, does not result in either endless wrangling or stagnation. There is a volume of Columbia Statutes, and unwritten laws to the amount of several or more volumes, but these are not sufficient to check the development of the university. So far as I can find out the growth of Columbia is due to the spirit of initiative in the individuals and the spirit of liberality in the university as a whole. Each school or department just goes ahead and does whatever it thinks best. The president just goes ahead and does whatever he thinks best. In this way things get done and all live together very happily. The professors do not worry themselves or worry each other, as they are apt to do in smaller faculty communities. The university is so big and complex that nobody feels responsible for all that is done and undone in it, not even President Butler. He runs the university with the nonchalance and efficiency of the head of a railroad system or a department store, combined with the ideals of a philosopher.

Of course the danger, or rather the inevitable defect, of a university immersed in a great city is that its numbers have such scattered interests that they lose the sense of unity. There are 735 officers of instruction and administration, and Greater New York does not contain all their homes. In order to promote fellowship and mutual understanding various groupings and meetings, more or less spontaneous and informal, are arranged. There is, for example, the Faculty Club, housed in one of the old insane asylum buildings left on the campus and now fitted up for lunching and lounging. The Teachers College people have substituted dinners for faculty meetings, thus disembarrassing themselves of parliamentary law and securing a greater unanimity of opinion. I found in the University of Minnesota

a similar custom, and I suggest that it might be adopted to the advantage of health and temper in many universities. The symposium, if that is not too academic or journalistic a word to use, seems to be especially adapted to the prevailing mode of thought of to-day, which gives greater recognition to personality and puts less confidence in logical exposition than formerly. Discussions of social, philosophical, and religious questions in Europe and America are recently taking this form. I have in mind particularly the dialogues of Mallock, Dickinson, Frederic Manning, Schiller, Dewey, the plays of Shaw, and the numerous pseudo-novels devoted to serious themes. Conversation and letter writing are not lost arts, and any one who says they are is to be pitied. One series of Columbia conversations has been published, "Talks on Religion," under the leadership and editorship of Professor H. B. Mitchell, of the department of mathematics, interesting as a frank expression of the various ways that religious questions are regarded by educated men of to-day. A more formal exchange of views was the series of twenty-one addresses delivered in 1907–1908 and afterward published by the university.[1] This unique experiment was a great success. The lectures were well attended, not only by the students and outside public, but by the officers of the university, and had such a good effect that

[1] The contents of this volume of "Lectures on Science, Philosophy, and Art" are worth noting as indicating the range of the discussion: Mathematics by Cassius Jackson Keyser; Physics by Ernest Fox Nichols; Astronomy by Harold Jacoby; Geology by James Furman Kemp; Biology by Edmund B. Wilson; Physiology by Frederic S. Lee; Botany by Herbert Maule Richards; Zoölogy by Henry E. Crampton; Anthropology by Franz Boas; Archæology by James Rignall Wheeler; History by James Harvel Robinson; Economics by Henry Rogers Seager; Politics by Charles A. Beard; Jurisprudence by Munroe Smith; Sociology by Franklin Henry Giddings; Philosophy by Nicholas Murray Butler; Psychology by Robert S. Woodworth; Metaphysics by Frederick J. E. Woodbridge; Ethics by John Dewey; Philology by A. V. W. Jackson; Literature by Harry Thurston Peck.

other colleges, large or small, might well have a similar series. It does a man good to have to stand up before a roomful of his colleagues and fellow-townsmen for an hour and tell in plain language what he is devoting his life to and why he thinks it worth while. It does the rest good to hear him, for ordinarily, even in small institutions, professors are grossly ignorant of the recent progress and the dominant tendencies of departments of research remote from their own. Ideas are generally carried from one classroom to another, if at all, subterraneously by the students, as the plague is carried between houses by rats. This series of Columbia lectures was started off by an unexpectedly eloquent and inspiring address on mathematics by Professor Keyser. It set such a high keynote that some of the later men strained their voices trying to reach the pitch. Some did not try. But they all were remarkably successful in putting into brief space and comprehensible form the principles and methods of their respective sciences.

Although these were formal lectures and not a debate, it was easy to detect in them echoes of current controversies. President Butler found time not only for an admirable survey of the history of his subject from Thales to Kant, but also for an earnest plea for the thorough study of the philosophical classics and a witty warning against modern inventions such as pragmatism, "which, when unfolded to the man in the street, makes him howl with delight because he at last understands things." Then Professor Dewey, when his turn came, gave quite a different version of the history of philosophy and of the consequences of the adoption of pragmatism, or, as he prefers to call it, "the applied and experimental habit of mind." When Professor James in 1907 expounded his pragmatic philosophy at Columbia, it gave rise to many social discussions, and as a token of appreciation of his stimulating visit nineteen members of the philosophical and psychological departments contributed to

a volume of "Essays in Honor of William James," a notable evidence of the interest taken in fundamental problems in Columbia.

I have given prominence to this matter of a faculty exchange of views, because I believe it to be more important than another building or a new degree, and because all our universities, it seems to me, are deficient on this point. Even in small and isolated colleges each man works in his separate star and descends to meet his colleagues, talking trivialities with them instead of giving them the best of his thought. The confusion of Babel has lasted long enough. It is time for those who are working side by side in the erection of the Temple of Wisdom to learn each other's language.

There are few, if any, universities where an interchange of opinions is more useful than at Columbia, because there are few, if any, where more diverse opinions are held. There are institutions where to talk to a colleague on politics, religion, or other topic of common interest is no more exciting a pastime than looking into a mirror. A city university is deficient in unity, but it has the advantage that its members do not have to see so much of each other that they get bored by it. They are packed like shot, not like dates. Each man has a tangential acquaintance with a dozen of his colleagues, but his self-sphered individuality is not destroyed by the pressure of too great intimacy. In Columbia one sees all varieties of costume, from the most punctilious to the most unconventional, but not worn in superciliousness in the one case, or bravado in the other, but in unaffected freedom in both. So of opinion; conservative and radical, orthodox and heterodox, commingle without self-consciousness, and each man views the eccentricities of his colleagues with a tolerant or indifferent eye. If one feels it necessary to criticize the ideas or actions of another, he does not resort to a whisper or a roar, but uses the same tone of voice as though he were expressing an unfavorable opinion about

the weather. There is a spirit of liberality about the university, as a whole, that protects even the narrow-minded from condemnation and ostracism. The modern symposia have the advantage over the ancient that no one is obliged to drink hemlock afterward, no matter however unpopular may be the views he has expressed. Some of the Columbia men dream of reforming education, some finance, some society, some philosophy, some spelling. But, of course, there must be limits to freedom of speculation and deviation from accepted standards by men in official positions, so it is quite to be expected that the most daring of these innovators, those who attack the orthodoxy of orthography, should be looked upon with a certain amount of reprobation and distrust by their fellow-academicians. One Columbia professor not long ago refused to accept the dissertation of a candidate because he had used the simplified spelling advocated by another professor.

Columbia is a big university and a small college. Its graduate school is by far the largest in the country. It has approximately twice as many graduate students and half as many undergraduates as Harvard. Johns Hopkins is the only university besides Columbia where the graduates outnumber the undergraduates, and Johns Hopkins has hardly more than a tenth as many students all together as Columbia. Since Columbia lays most stress upon its graduate and professional schools, it was most concerned with the problem of the relation of these schools to the college or undergraduate department. On the one hand, those interested in professional education complained that four years spent in college delayed unduly the time when the student entered upon his specific training and indeed unfitted him for undertaking it. On the other hand, those interested in cultural education complained that early and complete absorption in vocational work produced a narrow-minded and indeed incompetent man. Both parties ob-

viously had some grounds for their complaints, so Columbia settled the question by the simplest of compromises, splitting the difference. It proposed the "combined course" of six years, by which the student, after two or three years of college work, is allowed to take professional studies, receiving his bachelor's degree at the end of four years from the time of matriculation in the college. The Columbia plan swept like wildfire over the country, and has been adopted, more or less openly, by practically all universities except Harvard and Johns Hopkins. These two insist upon a bachelor's degree for entrance to their medical and other professional schools, though they permit capable young men to obtain this degree in three years. The combined course is not so revolutionary a movement as it appears to be. It is in large part merely a way of evading a legal fiction. Educators are apt to get tangled up in a web of their own spinning and then to make a big buzzing getting out. The distinction between cultural and professional studies as drawn was largely fictitious, for it was determined not by the nature of the subject or how it was taught, but by whether the student did or did not use his knowledge of it for pecuniary advantage in after life, a question which, from the nature of the case, could not be determined until he was dead. It was akin to that other question which has equally agitated academic circles, whether a student could play on the team if he had made money by his skill. It is not worth while discussing whether A.B. or B.S. can be given with propriety for a semiprofessional course, because these degrees convey in general no information as to the kind of studies taken, sometimes not even when the college is known. Take, for example, the case of Columbia College. A boy entering with four years of Latin to his credit, but not wishing to take a fifth, is debarred from receiving the degree of A.B. He gets B.S., even though he may spend his four years mostly in literary studies. But if he takes Freshman

Latin, he is sure of getting A.B., even though he may take more scientific than classical studies in the first two years and go into Medicine or Mines for the next two years. That is to say, the faculty of Columbia University stands committed to the theory that the sole essential difference between a humanistic and a scientific education is the reading of Horace and Livy in the original and that this difference is so important that it must be marked by different degrees. This represents the unanimous opinion of the College Faculty after devoting two years to the discussion of the question.[1]

The combined course naturally tends to promote migration at the end of two years or thereabouts from the small colleges to the professional schools of the great universities. But this leaves the college with few graduates and these not of the best quality. In order to appease the college and to prevent it from losing the allegiance (and benefactions) of the students who depart before the completion of their course, the *renvoi* system has been devised. For example, the student who leaves the college at the end of his Sophomore year to go to the university medical school may at the completion of two years of the medical course be sent back to his proper Alma Mater for his bachelor's degree, as though he had remained in residence. A few colleges without professional schools have adopted this plan. Others doubtless will, for the university obviously has it in its power virtually to enforce it by reversing the proposition. If a college should refuse to accept the two years spent in the professional school as the equivalent of its own final years, the university may return good for evil, and, accepting the two years of college work as equivalent

[1] Dean's Report, 1905, p. 69. The new system of sequential and Honor courses, adopted in the spring of 1910, increases somewhat the difference between the A.B. and B.S. work but at the same time it puts a still higher premium on that precious fifth year of Latin.



Columbia University.

BARNARD COLLEGE.



Columbia University.

TEACHERS COLLEGE BUILDINGS.

Main Building.

New Domestic Arts Building.

Whittier Hall.
(Women's dormitory.)

to its own earlier collegiate years, grant the bachelor's degree.[1] Since the bachelor's degree from the university would presumably carry greater prestige than that from the small college, migration would be more common than under the *renvoi* system. Apparently the small colleges are not yet ready to say, "Let us have the first two years of a boy's life and we care not who has the rest." But if they do not adopt some sort of combination or affiliation, they are likely to find themselves crowded out by a coming race of super-high schools. It is an open secret that the high average age of students entering college is not because of severe entrance requirements, but because parents are, with reason, unwilling to subject their boys to the influences of college life at an earlier age. That is, the college itself acts as a deterrent instead of an accelerator. It may not be possible to educate the average boy so that he gives lectures on the fourth dimension at the age of thirteen, like William James Sidis, but it is quite practicable to give him a working comprehension of the three dimensions that are in common use.

Columbia College has hitherto stood with Yale, Harvard, and Princeton in insisting that the examination is the only proper test of fitness for entrance, in opposition to the theory of the State universities that the candidate's school record, as shown by his certificate, gives better evidence of his ability to do college work, than the dreaded ordeal of the examination room. In practice, however, the rigidity of the examination requirement has been considerably modified, as the investigations of the Carnegie Foundation have shown[2] by the large proportion of admissions on condition. That this liberal policy was,

[1] See reports of the Dean of the College of Physicians and Surgeons, 1908 and 1909.

[2] See College Entrance Requirements in Theory and Practice, by J. G. Bowman, of the Carnegie Foundation, in *The Independent*, Jan. 21, 1909.

on the whole, justified was shown in the case of Columbia by a study of the collegiate records of the conditioned men, from which it appeared that 80 per cent of them proved wholly acceptable students. In 1909 Columbia University took an important step toward making this necessary flexibility just and rational by appointing a professor whose chief duty is to familiarize himself with the effectiveness of the preparatory schools and to pass upon doubtful cases of candidates for admission by taking into consideration their school records and personal characteristics. This is something of a concession to the State university theory, but has the advantage of retaining the entrance examination, which undeniably has a great educational value, and of avoiding the dependence upon the bare certificate of graduation from the high school, which is the weakness of the State university system.

Undergraduate instruction for women is provided in Barnard College, which is a quasi-independent organization, ostensibly on an equality with Columbia College, the same standards of admission and graduation being required, and many of the professors dividing their time between the two institutions. In this matter Columbia University stands intermediate between such institutions as Princeton and Yale, which make no provision for college women, and such institutions as Cornell, and the State universities which admit them to all classes. Barnard has a more honorable standing than Radcliffe, and is more frankly recognized as a legitimate member of the university community, although it had a hard struggle to secure such recognition. Even the most ardent coeducationalist must acknowledge that the extent and manner in which young people of opposite sex are allowed to associate is not primarily an educational question, but is dependent upon the social conventions of the particular locality, and he cannot object to segregation on the ground of injustice if equal

facilities are accorded to both. This is the case, with some exceptions, in Columbia University. The course of Barnard College does not offer so wide a range of electives as Columbia College, but it has a liberal curriculum. Women are admitted to the nonprofessional graduate schools and to the schools of pharmacy, architecture, music and design, but are debarred from the schools of law, medicine, and applied science. This is an unwarranted exclusion, because there are exceptional women who have done good work in some of these professions. Women who come to Columbia after graduating from coeducational colleges find it exasperating to be shut out from some advanced courses that they need and are qualified to take, simply because these courses happen to be classified as undergraduate or professional. But through the growth of the summer school, of Teachers College, and of the extension courses, these artificial barriers are being gradually and unobtrusively broken down.

The form of women's education most needed to-day is vocational training, sufficiently thorough and dignified to check their aimless craving for a vacuous culture. Two fields of employment are now customarily assigned to women, domestic arts by inheritance and teaching by recent conquest. In providing training for these professions Columbia University has done more than any of the State universities and more than all the women's colleges. The latest building erected on the Teachers College campus has a militant look. One would think that its battlemented tower was to be manned by Amazons or suffragettes. But, on the contrary, it is the stronghold of what the most conservative regard as proper for women, the household arts. These have been woman's rights from the Stone Age to the present. Now, however, she is in danger of losing them. It is a question whether cooking, dressmaking, millinery, laundering, and the like can maintain their amateur status in the face of professional competition. Whenever it appears that a

household craft can be made profitable, interesting, and honorable, the men take it to themselves. Elevating a trade generally means putting it above the reach of women.

But whether the domestic arts stay in the home or go to the factory and the hotel, the women have here the best of opportunities to learn how to hold them or follow them. The new building, costing over half a million dollars, is five stories high and occupies an acre of ground, a bewildering succession of studios, shops, kitchens, classrooms, and laboratories. Training is provided to meet the needs of three different classes; those who aspire to the management of a single household, those who expect to teach domestic science and art in the numerous schools and colleges now demanding it, and those who will enter the professional branches. The most original and important of these lines of work is the third, the facilities afforded for carrying commercial operations on a large scale and according to modern methods. The cooking utensils range in size from a chafing dish to a soup kettle big enough to supply the wants of the hundreds of young women who live in Whittier Hall, the Teachers College dormitory. Menus are planned for two persons or for the charitable institutions of an entire city, always according to the double requirements of making both ends meet and keeping the proper ratio between proteins and carbohydrates. The looms, dyeing vats, and laundry machinery are not playthings, but big enough to command respect. In fact, we have here the beginnings of new branches of engineering, and it is a mere Columbian idiosyncrasy that they should be developed entirely independent of the School of Applied Science, which includes the more conventional courses.

Side by side with the industries go science and art. For each shop room there is a laboratory for research and an atelier for design. Dean Russell sends his dressmakers to Europe to learn the secret of Parisian supremacy, and puts

them into New York department stores to get American practice. Dean Russell seems to differ from other educators in having a shorter reaction time. He seizes an idea and puts it into effect at once, which is disconcerting to those who have been advocating that idea for a dozen years in vain and were willing to go on advocating it in vain for another dozen. He has been struck with the impracticality and futility of much of what is done under the name of "manual training," and he is now trying out in the Speyer School a new curriculum based upon a threefold division of studies, humanistic, scientific, and industrial. By having the pupils in the elementary grade take up in successive years the industries concerned with foods, textiles, woods, metals, and clays, he expects to keep their interest and provide them with practical information and training, while giving them an opportunity to apply their scientific knowledge and artistic skill to the work in hand.

Besides the Speyer School for practice and experimentation, Teachers College has the Horace Mann School, containing kindergarten, elementary, and high school, which is run in a more conservative way and utilized for observation.

Teachers College is the Cinderella of Columbia. Her elder sisters have been inclined to look down upon her in spite of her undeniable usefulness in a humble capacity. But now with an independent annual budget of $635,000, and with an attendance of 1544 students, who have had on an average five years' experience in teaching, besides 1796 extension students and 1269 pupils in its schools, with seven large and well-equipped buildings and with its graduates in strategic positions all over the country, Teachers College is in a position to command respect and confer favors. There are indications that universities are likely to prosper in the future in proportion as they take an interest in school teachers. Teachers College is a unique feature of Columbia

University. Its only rival in this field is the School of Education of the University of Chicago, and Teachers College has recently gone far ahead of the Chicago institution in numbers, plant, and the extent and variety of its work.

The oldest and most renowned of the Schools of Applied Science is the School of Mines, established in 1863. To this have been added Schools of Chemistry, and of Civil, Mechanical, Electrical, and Sanitary Engineering. The combined course plan has not yet been extended to these schools, which still admit directly from the high schools, but an increased number of students are voluntarily taking one or more years of collegiate course before devoting themselves to technical work. The engineering students nowadays associate more freely with the college students than formerly, and on terms of equality. In the past year the engineering schools of Columbia have gained 15 per cent in numbers, which is nearly twice the gain made by any other engineering school, East or West. Dean Goetze is an expansionist and has his eye on two additional fields of applied science, agriculture and forestry. That a city university should enter upon such work is surprising in view of the fact that every State has an agricultural college and experiment station receiving funds from the national treasury. Yet here this new profession of forestry, in which the agricultural colleges had the best chance, has been lost to them through their lack of foresight and enterprise, and is now being taken up energetically by three endowed universities, Yale, Harvard, and Columbia, which are likely to get so far ahead as to have no competitors, at least in the East. The opening for Columbia in agriculture is not so clear, at least to me. Cornell has dropped forestry, so Columbia has an opportunity to make itself useful in the State forest reserves, now being extended. But in agriculture Cornell will be hard to beat so long as it has at the head of the department a man of such initiative as Professor

Bailey. Columbia plans, as I understand it, to attack a neglected problem, that of feeding a city from the waste land in its immediate vicinity. A thousand-acre farm within easy reach is to be opened soon, half of it to be used for experimentation and half of it for demonstration of the practical results established.

The medical school of Columbia University, the College of Physicians and Surgeons, was established in 1807, and has been in the process of annexation ever since. Theoretically the process was completed under the administration of President Low in 1891. Practically it remained a separate institution, for it is located on Fifty-ninth Street, nearly three miles away. In the spring of 1910, however, a site was purchased for it on Morningside Heights adjoining the other university buildings, so the students and officials may enjoy a common life. Three million dollars will be expended here in buildings and equipment. Its new resources and facilities will be devoted, it may be surmised, not so much to the making of more doctors as to the making of doctors less necessary.[1] Research into the causes of disease is now the thing most needful, then, on the basis of assured knowledge, will come the working out of plans for preserving the health of the community. The attack will first be made on the most mysterious and irresistible of mankind's enemies, cancer. The late George Crocker made a bequest of $1,500,000 to $2,000,000 to Columbia University, to be devoted exclusively to the investigation of cancer until a cure for it is discovered. The university is especially fitted to undertake the task of popularizing and utilizing the knowledge of preventive medicine because many of its professors are actively engaged in philanthropic and charitable organizations and in

[1] The supplement to the Columbia University Quarterly, June, 1908, contains an elaborate program for a school of sanitary science and public health.

various forms of public service and settlement work. Sociology is an applied science at Columbia, or will be if its professors can make it so. In this connection I should refer to the recent gift of $150,000 to Teachers College for the training of women for a new group of professions; school nurses, sanitary inspectors, teachers of hygiene, and settlement workers. If, now, Columbia would follow the example of London University and establish a research laboratory of eugenics with the combined force of its biological, medical, and sociological departments and its theological allies, it would be in a position of undeniable leadership. The motion would probably be seconded from the Pacific Coast by Stanford University, for President Jordan has long been preaching the importance of improving the quality of "the human harvest."

The first professorship of law in the United States was founded by Columbia in 1773, and this profession has always attracted a larger number of Columbia men than any other. A new building, Kent Hall, is now being completed on the corner of Amsterdam Avenue, near the library, for the accommodation of the Law School and the Faculty of Political Science.

The site on the opposite corner has been assigned to the School of Journalism for which Mr. Pulitzer, of the *World*, gave a million dollars some years ago. The skepticism and ridicule which the attempts of some universities to enter this field have aroused seem to me to be based on an inadequate idea of its extent and importance. If a school of journalism is to teach merely how to buy white paper cheap and sell smudged paper dear, or to give training in the arts of painless interviewing and of composing headlines of twenty-five letters always containing a verb, it is indeed not worth while. But journalism properly covers the whole art of effective presentation in print, and as such it should have as prominent a place in the modern curricu-

lum as oratory did in the ancient. The sophists and rhetoricians of to-day have audiences of millions through newspapers and magazines, and the universities are largely to blame that they lack the training and responsibility of the established professions. The preparation of a series of "feature stories" for a magazine on a financial, political, sociological, or industrial subject often involves as long and arduous research as a doctor's dissertation, and it requires in addition something the doctor is apt to be painfully deficient in, the ability to make his points clear and his argumentation readable.

More than most universities, Columbia is already engaged in journalism. I have in hand a list of the publications of the Columbia University Press, occupying twenty pages, volumes on protozoa, Chinese, roguery, taxation, Weltschmerz, Zoroaster, Sumerians, ants, and other things of the same kind. The latest president's report names forty-five periodicals with which officers of the university are editorially concerned. The students who have charge of the *Spectator* have their own linotype and press in one of the university buildings, and some of them sit up every night until the paper is "put to bed," be it late or early. I mention this for the benefit of the student editors in some of the other universities, who shove off on the foreman this inconvenient responsibility. Two literary periodicals are published by the undergraduates, the *Columbia Monthly* by the men, and the *Barnard Bear*, by the women. The latter is larger, but I would not venture to say, from the few copies I have compared, which has the greater literary merit.

Like all the universities, Columbia is deficient on the esthetic side. But unlike others, the university is aware of the deficiency and is taking energetic steps to remove it. There is a four-year-old Faculty of Fine Arts, embracing architecture, music, and design, but of these architecture is the only one effectively organized. This has the advan-

tage of the largest architectural library in the country, the Avery collection, and of three ateliers, one at Columbia and two down town under the direction of prominent architects. The School of Music has only six matriculated students, and the School of Design none. But the National Academy of Design has become associated with the university, and it is expected will eventually have a new building on the Heights. A similar relationship may be established with the Institute of Musical Arts, which is building on an adjoining block.

A striking instance of the drawing power of a great university is the removal of the Union Theological Seminary from its down-town home to a site just across Broadway from the Columbia campus, where it is erecting a magnificent block of buildings, chapel, library, classrooms, and residences for faculty and students, all combined. The univ rsity and the seminary exchange students freely. There are now sixty-five Union students taking part of their work in Columbia, mostly in some branch of sociology. It is curious to observe that although Columbia is by tradition an Episcopalian institution, the General Theological Seminary, which belongs to that denomination, sends only thirteen students to the university. The Roman Catholic archbishop of New York has recently forbidden the seminarians of Dunwoodie to attend lectures at Columbia. Both the Union and the General have representatives on the University Council.

If the visitor to Columbia wishes to make a favorable impression, he will take occasion to allude to Morningside Heights as "the Acropolis of America." This ridge between the Hudson River and the Harlem Valley, the scene of Washington's victory, will contain many imposing buildings and educational institutions. Besides those belonging to Columbia there are the Cathedral of St. John the Divine, to be one of the largest churches in the world; St. Luke's

Hospital, the Academy of Design, the Institute of Musical Art, Union Theological Seminary, Jewish Theological Seminary, and Grant's Tomb; while on the next hill to the north are the new buildings belonging to the College of the City of

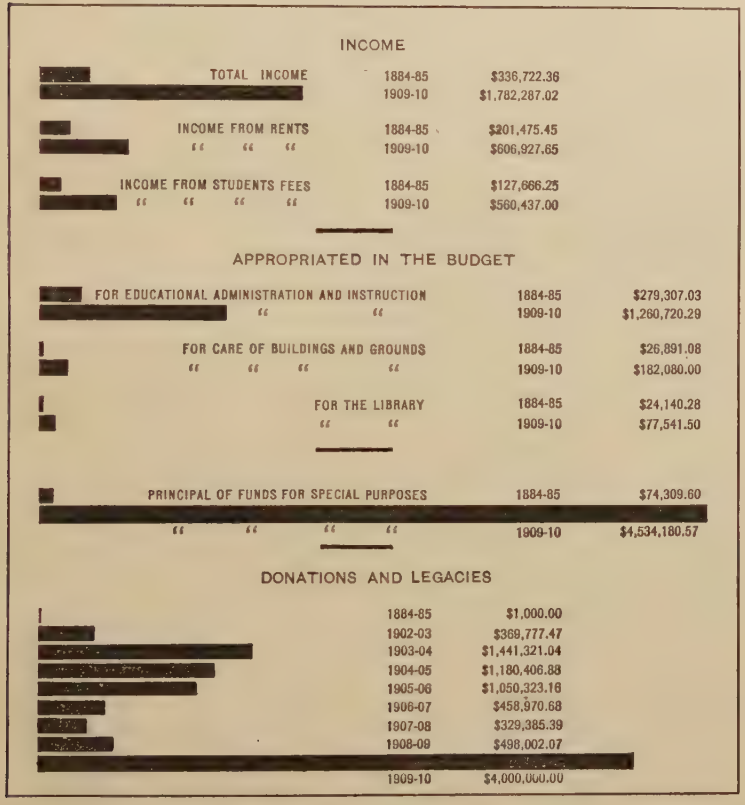


DIAGRAM SHOWING FINANCIAL GROWTH OF COLUMBIA UNIVERSITY.

New York, and beyond is a group composed of the Hispanic Museum, the Geographical Society, the Spanish Church, and other monumental structures.

To give a list of all of the cultural institutions with which Columbia is associated would be to name almost all there are in New York, and these are more than is generally sup-

posed. But mention must be made of the Metropolitan Museum of Art and the American Museum of Natural History in Central Park, and of the Botanical and Zoölogical Gardens in Bronx Park, because these are so closely connected with Columbia by interchange of officers as to be for all practical purposes research departments of the university. Columbia students also have access to valuable private libraries and museums such as the Morgan collection of manuscripts and archæological specimens and the Plimpton collection of school books. On the other hand, Columbia is generous in opening its libraries to visiting scholars and to residents of the city who find the resources of the public library insufficient for their investigations.

Besides affording facilities for the prosecution of research, Columbia University makes itself useful to the city in thousands of unostentatious ways. During the year there are given over three hundred lectures and recitals opened freely to the public. The extension work is developing rapidly in directions most needed or most desired by the people of the community; languages, nursing, photography, stenography, farming, Bible, drama, kindergarten, politics, Persian poetry, and bookbinding; two hundred and fifty such courses, including many things that other institutions would find it beneath their dignity or out of their power to give. The lecture rooms, laboratories, ateliers, and shops seem to be busy every day and much of the night. The great library is open nearly as many hours in a day and days in a year as a New York saloon. If kilowatt-hours is any measure of intellectual activity, Columbia must stand at the head.

There is no closed season in Columbia University, scarcely a dull season. The summer session, though short — only six weeks — is exceedingly busy, and is now drawing students from a wider range every year, very largely of late from the South, as does the University of Chicago. About

a third of the summer students have college degrees. It is becoming more customary also for the undergraduate students to take advantage of the summer school to shorten their course. In 1909 at Columbia a fifth of the students of the college and a fourth of those in the schools of Mines, Engineering, and Chemistry registered for summer work. In the last chapter I discussed at some length the advantages an institution derives from a summer session, and what was said there applies almost equally to Columbia, which, though starting later in summer work and not yet providing for it so satisfactorily as the University of Chicago, has come to recognize its real value. A summer session has somewhat the same good effect on a university as a camping trip on a city man; it shows how many of the necessities of life one can get along without. Entrance examinations, restrictions, classifications, regulations, segregation, conformity, traditions, customs, and the like tend to lose their importance to one who has served through a summer session or two.

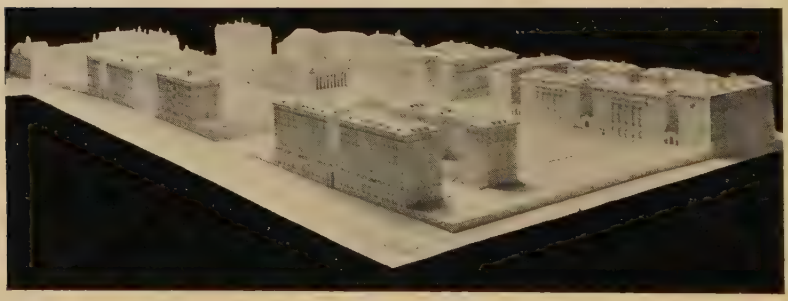
But while reaching out in new directions Columbia University is not neglecting its nucleus, the college. Especial attention has been given to undergraduate problems in recent years, and efforts have been particularly directed toward bringing the students together and bringing them more under the personal influence of the instructors. The two new residence halls on South Field have developed a social life of their own. They publish an illustrated paper, *The Dorms*, to chronicle its doings and gossip, the only periodical of its kind in existence. Barnard also has a new residence hall. The undergraduates of Columbia do not own the university, as they do in some places, but they seem to have as many irons in the fire in the way of athletic, dramatic, debating, and fraternal organizations as students have elsewhere, judging by the lists in the annual *Columbian*. The block opposite the library will be de-

voted to Columbia College, a chain of residence and recitation halls surrounding it, and commons and clubrooms in the center.

Columbia University has the essential qualities for success — initiative, adaptability, and opportunity. It seems to have no difficulty in getting the men and the money it needs. During the last eight years it has received over $11,000,000 in gifts. The accompanying table shows its financial gains. The late J. S. Kennedy, who gave $500,000 anonymously for the construction of Hamilton Hall, the collegiate recitation building, left to Columbia in his will a bequest which will amount to two and a half or three millions, to be freely used. Columbia University, as I have shown, is mindful of needs of the surrounding population, and is at the same time becoming more attractive to ambitious young people from a distance and foreign countries. It is promoting migration both of students and professors. It supports a chair in Berlin University, the Theodore Roosevelt professorship, and in return Berlin sends every year to Columbia the Kaiser Wilhelm professor. Two decades ago Columbia was a small college with three loosely attached professional schools, crowded in old buildings down town, and regarded by the outside world as local, sectarian, and unpromising. Now it is metropolitan and cosmopolitan, and if it continues to progress as it has in recent years it is likely to take a position among the universities of the country similar to that of New York among the cities.



INTERIOR OF ST. PAUL'S CHAPEL, COLUMBIA UNIVERSITY.



ARCHITECT'S MODEL OF THE COLUMBIA CAMPUS.

THE ENROLLMENT OF COLUMBIA UNIVERSITY, 1888–1910.

Year	Columbia College	Barnard College	Graduate Schools	Applied Science	Law	Pharmacy	Medicine	Teachers College	Architecture	Music	Summer School	Total[1]	Extension Courses
1888–89	288	—	69	232	477	—	702	—	—	—	—	1768	—
1889–90	309	—	98	257	447	—	619	—	—	—	—	1730	—
1890–91	272	—	284	277	625	—	534	—	—	—	—	1756	—
1891–92	298	—	341	351	318	—	570	—	—	—	—	1573	—
1892–93	296	—	289	384	269	—	654	—	—	—	—	1641	—
1893–94	272	—	141	377	248	—	766	—	—	—	—	1805	—
1894–95	252	28	223	407	261	—	799	—	—	—	—	1971	—
1895–96	263	40	208	371	323	—	706	—	—	—	—	1911	—
1896–97	307	72	220	399	357	—	638	—	—	—	—	2018	—
1897–98	335	80	263	429	367	—	763	—	—	—	—	2271	—
1898–99	403	202	376	363	349	—	726	297	96	—	—	2812	1173
1899–00	465	251	442	414	380	—	787	391	77	—	—	3207	751
1900–01	476	301	466	498	423	—	797	528	68	—	417	3761	679
1901–02	492	339	535	541	440	—	809	634	85	—	579	4234	900
1902–03	495	358	623	638	461	—	795	633	84	—	643	4507	1196
1903–04	504	403	692	650	384	—	674	688	90	—	1001	4709	1590
1904–05	534	366	782	601	341	442	555	721	78	44	961	4981	1886
1905–06	589	390	861	580	286	353	437	865	107	33	1018	4964	2738
1906–07	638	419	877	537	264	247	381	743	106	31	1041	4852	2719
1907–08	650	453	977	618	249	224	314	896	125	31	1395	5373	3267
1908–09	630	470	960	661	310	275	299	957	117	26	1532	5633	3100
1909–10	636	522	1030	667	318	277	310	1025	134	23	1971	6232	1671

[1] Duplications deducted.

CHAPTER XV

COMPARISONS AND CONCLUSIONS

THIS chapter has been added to the others in order to make some comparisons, to draw some general conclusions, to remedy some omissions, and to add some criticisms that ought not to fall upon a single institution. The comparisons, in so far as they can be made statistically, may be best presented in their simplest form, that is, in one dimension. Geometry is easier for all of us than arithmetic or language, for the human race has used this mode of thinking longest. In presenting these diagrams and statistics [1] I do not wish to be understood as giving them an exaggerated importance. The really important things are incommensurable and uncountable. Some one young man or woman among these units is better worth educating than a thousand others. But which is the one, and what kind of training is best for him or her, no man knows. When the psychologists become skillful enough to determine vocational ability by tests of reaction time and association of ideas, we may save money, time, and metabolism of gray matter by confining higher education to the fittest. In the meantime it is best to throw out a wide net with a fine mesh.

[1] The figures used were received in most cases from the university authorities directly, but have been supplemented where necessary by reference to Professor Tombo's invaluable reports (*Science*, Dec. 24, 1909, etc.), the Carnegie Foundation, and the *World Almanac*. They are the latest and best I could obtain, but it is impossible to secure accuracy, for the systems of classification in use by different universities are so various as to be often incomparable. Besides this some university catalogues report the registration for the first term, others for the entire year, and often there is no way of telling to what part of the year or even to what year the figures refer.

Consequently we should not speak sneeringly of "mere numbers," for the size of a university is really a measure of one dimension of its influence. The age of a university is also a factor not to be despised, as it sometimes is by the younger institutions. Age confers upon its graduates something of the honor, dignity, and responsibility derived from the long line of illustrious predecessors. It gives to the institution prestige, stability, and momentum, so it is able to accomplish easily and quietly things which in a newer university can only be done with much fuss and nervous strain. Size and age together give a large body of living alumni, and this has a practical value to the university in securing students and benefactions, and to the student by giving him friendly aid wherever he may go. The alumni list is in a way the measure of the influence of the university in current affairs. Wealth is also power, in education as elsewhere, and is best estimated by annual income rather than by endowment or property.

TOTAL NUMBER OF STUDENTS REGISTERED IN FALL OF 1909

Columbia, 6232.

Harvard, 5558.

Chicago, 5487.

Michigan, 5259.

Pennsylvania, 5033.

Cornell, 5028.

Wisconsin, 4947.

Illinois, 4638.

California, 4520.

Minnesota, 4436.

Yale, 3297.

Stanford, 1747.

Princeton, 1400.

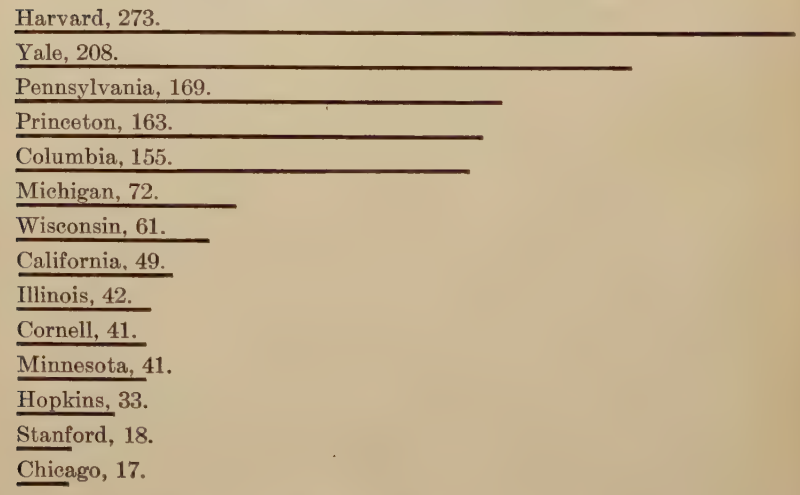
Hopkins, 725.

Some idea of the relative importance of the leading universities as contributors to the various professions may be obtained by a study of "Who's Who in America." This handy volume was never designed to serve as a basis for the many statistical edifices that have been built upon it, but with all its faults and inadequacies it is our most convenient measure of a certain degree of prominence in certain lines. The volume for 1908–1909 includes 16,395 names of living men. Considering only the four or five colleges which have furnished the most names in the chief branches of activity, the following results are obtained:[1]—

Harvard has trained the largest number of distinguished lawyers, 208. Next stands Columbia, with 132, and then Yale and Michigan, with 108 each.

Of the men prominent in education, Harvard has produced 204; Yale, 178; Michigan, 93, and Johns Hopkins, 76.

AGE OF THE UNIVERSITIES, 1909



[1] These figures were compiled by the *Yale News* and published Dec. 9, 1908.

In the ministry, Yale stands first with 83; followed by Harvard, 58; Wesleyan, Connecticut, 40; Princeton Theological Seminary, 36.

Of distinguished men of letters, Harvard has produced 133; Yale, 91; Michigan, 32; Princeton, 31.

The greatest number of governors, diplomats, and other national officials were educated at Harvard, 29. Next stand Yale, 16; Columbia, 13; University of Virginia, 11.

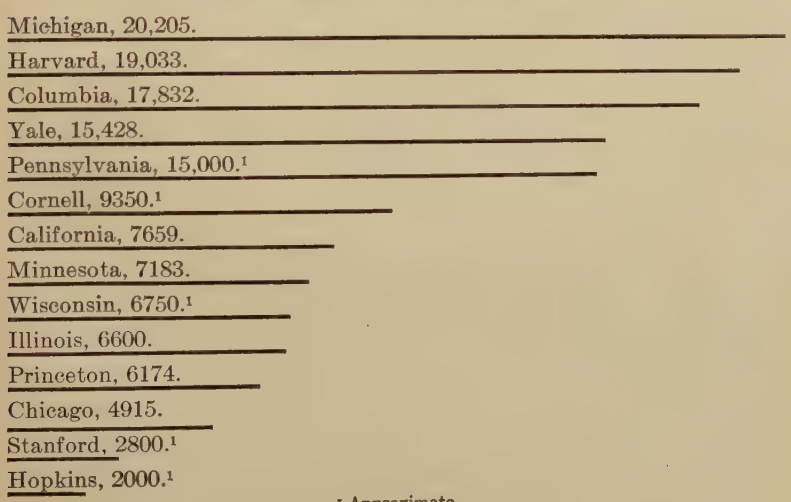
In medicine, the College of Physicians and Surgeons of Columbia stands at the head with 119 graduates, followed by Pennsylvania, 104; Harvard, 75; Yale, 35.

Of men prominent in research, Harvard is credited with 133; Columbia, 80; Yale, 50; Cornell and Johns Hopkins, 39 each.

In engineering, Rensselaer Polytechnic Institute stands first, 35; Cornell and the Massachusetts Institute of Technology are second with 25 graduates each; then Yale, 22; Harvard, 21.

This indicates the past rather than the present standing

NUMBER OF LIVING ALUMNI



[1] Approximate.

of the universities, for most of those who are now being "Who's Who'ed" received their collegiate education more than twenty years ago.

Still further in the past are the statistics obtained from Appleton's "Cyclopedia of American Biography," [1] published in 1888. Of the 15,142 names included in this work, about a third are college-educated, and of these the following universities have contributed most: Harvard, 883; Yale, 713; Princeton, 319; Columbia, 198; Pennsylvania, 175; Cornell, 20; Michigan, 16.

A more exact study of a more limited field is made by Professor Cattell,[2] from which I quoted in the Harvard chapter. He found by ascertaining the universities in which the thousand most eminent men of science in America had pursued their graduate studies that Johns Hopkins had excelled chiefly in chemistry, physics, zoölogy, and physiology; Harvard in zoölogy and botany; Columbia in zoölogy,

INCOME FOR THE LAST FISCAL YEAR

Columbia, $2,207,501.
Chicago, $1,899,755.
Harvard, $1,827,789.
Illinois, $1,693,898.
California, $1,443,500.
Cornell, $1,417,304.
Michigan, $1,289,482.
Minnesota, $1,266,392.
Yale, $1,204,208.
Wisconsin, $1,165,543.
Stanford, $750,000.
Princeton, $560,690.
Pennsylvania, $540,624.
Hopkins, $317,000.

[1] Here also I am indebted to the *Yale News*, Feb. 13, 1909.
[2] *Science*, Nov. 23–Dec. 7, 1906.

botany, and mathematics; Cornell in physics and botany; and Michigan in botany and pathology.

An analysis of the membership of the National Academy of Science throws light upon two interesting points, namely, which universities have contributed most to the education of the eminent American scientists of our day, and which now have the largest number of them enlisted in their service. Out of one hundred members, 27 received their collegiate training in Harvard, 18 in Yale, 4 in Michigan, 3 in Cornell and in Columbia, 2 in Princeton and in Pennsylvania, and 1 in Wisconsin, in Johns Hopkins, and in California. The rest were educated in other colleges, or have not reported to "Who's Who" on this point. It is impossible to determine their present affiliations with a rigid classification, but it seems that Harvard has 20 of them as regular professors; Yale, 12; Johns Hopkins, 8; Chicago and Columbia, 7 each; Pennsylvania and California, 4 each; Cornell, Princeton, Wisconsin, and Michigan, 2

NUMBER OF UNDERGRADUATE STUDENTS IN THE COLLEGES OF ARTS, FALL 1909

Harvard, 2720.
California, 1827.
Michigan, 1770.
Wisconsin, 1617.
Minnesota, 1567.
Chicago, 1464.
Yale, 1229.
Princeton, 1164.
Columbia, 1158.
Stanford, 996.
Cornell, 953.
Illinois, 913.
Pennsylvania, 441.
Hopkins, 157.

each, and Stanford, 1. Of the rest about 14 are to be counted as in the government service at Washington.

The National Institute of Arts and Letters recently incorporated by Congress gives us a similar test to apply to the other half of the faculty. This list of distinguished men of letters, selected originally by the American Social Science Association, contains 115 names, not counting the artists and musicians. Of these, 27 had no college training. Of those who attended or were graduated from the fourteen universities here considered, Harvard furnishes 34; Columbia, 10; Yale and Princeton, 6 each; Johns Hopkins, 4, and Wisconsin, Chicago, and California, 1 each. (Honorary degrees are not included, but counting second degrees from another institution brings in a little duplication.) Many of the members of the Institute are lecturers in one or more universities, but 34 appear to be sufficiently identified with particular universities to be counted as part of their regular staff, and these are distributed as follows: Harvard, 9;

ENROLLMENT IN GRADUATE DEPARTMENTS, FALL 1909

Columbia, 797.
Chicago, 441.
Harvard, 423.
California, 414.
Pennsylvania, 407.
Yale, 396.
Illinois, 272.
Wisconsin, 259.
Cornell, 253.
Hopkins, 178.
Michigan, 161.
Princeton, 134.
Minnesota, 93.
Stanford, 84.

Columbia, 8; Chicago, 3; Yale and Princeton, 2 each; Cornell, Johns Hopkins, and Minnesota, 1 each.

If we consider the more select body, the Academy of Arts and Letters, elected from the membership of the Institute, the supremacy of Harvard becomes still more evident. Out of 31 in the literary group of the members of the Academy, 10 were educated at Harvard, 3 each at Yale and Princeton, 2 at Columbia, and 1 each at Wisconsin and Chicago, while 5 had no collegiate education, and 1 each was graduated from Union, Amherst, Earlham, Williams, Washington and Lee, and the Naval Academy.

Of course it may be objected that the membership of these two academies does not represent the highest scholarship of America. The same criticism has been directed at the French Academy for 275 years. Still it would be difficult for any one to draw up a list which would be more generally recognized as satisfactory, and if we had such a list, the relative standing of the leading universities would not be materially altered.

SCHOOLS OF MEDICINE, FALL 1909

Pennsylvania, 544.
Illinois, 520.
Johns Hopkins, 390.
Michigan, 354.
Harvard, 312.
Columbia, 310.
Cornell, 182.
Minnesota, 176.
Chicago, 146.
Yale, 124.
California, 108.
Wisconsin, 48.
Stanford, 7.

It seems to me likely that a closer analysis of these figures would show that the representation of the different universities in the academies is roughly proportional to the number of men they were graduating at the time when these academicians were being educated. If this is true, it indicates that men of exceptional natural ability are pretty evenly distributed throughout the undergraduate student body of the United States, in spite of the fact that certain families noted for their number of eminent men send their sons to Harvard, Yale, or Princeton, generation after generation, and also that these have the extraneous advantages of wealth and influence in their careers.

The difference between the universities in regard to their undergraduate work is greatly exaggerated, while the difference in their graduate work is insufficiently recognized. The question, "Which college for the boy?" is not of such importance as it is popularly supposed to be. All the universities here considered, and a host of others, provide substantially the same facilities for the cultural and ordinary vocational courses in at least the first two or three years. The ratio of good teachers to poor does not vary

SCHOOLS OF LAW, FALL 1909

Harvard, 760.
Michigan, 760.
Minnesota, 376.
Yale, 352.
Pennsylvania, 345.
Columbia, 318.
Cornell, 260.
Chicago, 199.
Illinois, 180.
Wisconsin, 159.
California, 118.
Stanford, 83.

much the country through. All the libraries have more books than the undergraduate can read. Anywhere he can learn more than he wants to. Everywhere he will be subjected to the same temptations. He will find in any of the large universities a sufficient number of associates of any desired moral, cultural, or intellectual qualities. So far as social influences go it makes more difference which fraternity he joins than which university he attends. The reports of the Carnegie Foundation show that there are enormous differences in the average expenditure per student by the different universities, but I do not believe that there is any such difference between the quality of the instruction given or the opportunities afforded, or even any direct relation between the two, so far as undergraduate work is concerned.

On the other hand, too little discrimination is commonly shown in the selection of the institution for advanced work. The differences between the universities increase as one goes up the grades. In the field of research and specialized professional work the general reputation of a university is no safe guide. Yet too often the general reputation is

SCHOOLS OF APPLIED SCIENCE AND TECHNOLOGY, FALL 1909

Cornell, 1724.
Michigan, 1291.
Illinois, 1206.
Yale, 959.
California, 918.
Pennsylvania, 823.
Wisconsin, 783.
Columbia, 666.
Minnesota, 590.
Stanford, 475.
Harvard, 96.
Princeton, 13.

the deciding factor. For example, a man from California may go to Harvard or Yale for his graduate course because of their high renown, yet it may happen that Chicago or Cornell has far superior facilities for the particular work he wishes to undertake. The undergraduate is often blamed for his propensity for electing professors instead of subjects. I am inclined to think he is not altogether wrong in this, but, at any rate, the graduate should elect a professor instead of a university. The graduate student, before he begins his dissertation work, should make diligent inquiry for the most able man in the country in his chosen field and then go after him wherever he may be found. Nothing would do more to raise the standard of the graduate schools everywhere than such a disposition on the part of research students. A new-fledged doctor once suggested to me that this result could be attained most simply by putting the name of professor under whom the research was carried on in place of the name of the university in the title. "For instance," he said, "Ph.D. (Pickering) or Ph.D. (Wilson) means much more than Ph.D. (Harvard) or Ph.D. (Columbia)."

The graduate's trend of thought and life work are largely determined by his research professor, the man who sets his

SUMMER SCHOOLS, 1909

Chicago, 3,253.
Columbia, 1,971.
Harvard, 1,377.
Michigan, 1,225.
Wisconsin, 1,128.
Cornell, 889.
California, 819.
Pennsylvania, 434.
Minnesota, 315.
Stanford, 59.

course for his first voyage into the unknown. If the young man realized how much depended upon the personality and perspicacity of this pilot, he would take more pains in the selection. As it is, he is apt to choose his research professor as carelessly and unpremeditatedly as he chooses a wife. One of the benefits that would result from a greater discrimination on the part of graduates would be to give the lesser universities a more even chance to do advanced work of the highest order and to retain their best men. If students would flock from all parts to a man of superior attainments wherever he might be, his honor in his own country would be enhanced and the importance of his work better recognized elsewhere. The drawing power of the great university for professors is not so much a higher salary or a bigger laboratory as it is the chance to multiply one's efficiency by the aid of a devoted band of able young disciples.

At present the great universities are willing enough to promote migration, but not circulation. Yet we may look

DOCTORATES CONFERRED, 1898–1909

Chicago, 448.
Columbia, 436.
Harvard, 418.
Yale, 394.
Hopkins, 360.
Pennsylvania, 286.
Cornell, 237.
Wisconsin, 119.
Michigan, 86.
California, 47.
Princeton, 36.
Minnesota, 32.
Stanford, 19.
Illinois, 14.

for a greater reciprocity to come from the increasing coöperation and comity now being developed through the national associations of universities. As the requirements and courses become standardized there will be less reluctance to grant mutual credits. Then a student, even an undergraduate, could take a term or two in another institution of a different part of the country without loss of standing. The change from Eastern to Western, from Southern to Northern, perhaps to Canadian institutions, and *vice versa*, would be stimulating and liberalizing. Could not an American university make an arrangement with some German *gymnasium* by which an undergraduate student from this country could take a semester in Europe and return home without being punished for it? German professors come to us on a *Gastspiel*, and we send ours to Berlin and Paris. Similar exchanges have been arranged for teachers in the public schools of the United States and Prussia.

Personally I am inclined to think that after a student

TOTAL NUMBER OF VOLUMES IN LIBRARIES

Harvard, 850,278.
Yale, 575,000.
Chicago, 470,856.
Columbia, 434,194.
Cornell, 369,051.
Pennsylvania, 300,000.
Michigan, 258,609.
Princeton, 257,800.
California, 240,000.
Hopkins, 144,000.
Wisconsin, 135,000.
Minnesota, 135,000.
Illinois, 134,298.
Stanford, 120,000.

has spent two years in one college the law of diminishing returns begins to apply and that he would be likely to grow faster if transplanted to another environment; but I find few agree with me on this point. Many, however, will assent in the abstract to the statement that six, seven, or eight years in a single institution is too long for the best results.

The attendance at the schools of law, medicine, and engineering is given in the tables. But there are other professional schools not so commonly found in these universities which must here be mentioned. Three universities have divinity schools: Chicago with an attendance of 174, Yale with 108, and Harvard with 48. Besides these there are theological seminaries in close proximity to Princeton, Columbia, and California, which, though independent, are so intimately associated as to obviate the need of such a department. The leading schools of dentistry are Pennsylvania, 435; Michigan, 212; Minnesota, 196; Illinois, 105; Harvard, 86, and California, 57. Of pharmacy are Columbia, 277; Illinois, 229; Michigan, 93; Minnesota, 81, and California, 76. Of architecture, Pennsylvania, 407; Cornell, 139; Columbia, 134; Illinois, 103. Of agriculture, Illinois, 526; Cornell, 507; Wisconsin, 310; Minnesota, 278, and California, 171.

The influence of the different professional and graduate schools and the number and character of the men they have trained may be inferred from the various lists of prominent men which I have analyzed above. Doubtless the relative standing of the universities has changed somewhat since these men were educated, but I have no statistical and objective measure of it, and it would require more daring than I possess to venture to give their rank at present. And if it could be determined for to-day, it might not hold good for to-morrow. It is so largely a matter of personality that the removal of a single man from one institution

to another may upset the balance of power. In fact, if any university should by some unprecedented luck or foresight happen to get and hold half a dozen men of the highest ability as investigators and teachers on its faculty at one time, it would soon go ahead of all the rest, whatever the odds against it in the matter of location, income, and plant. The field is open and the handicaps are not so great as they appear. We are assured by the president of one of our greatest universities that the superiority of the educated over the uneducated man consists in the power to discern genuine worth and exceptional ability in other men. This possession of any such superior discernment is not, however, always obvious in presidents, trustees, and other educational authorities. For example, Mr. Carnegie, who had not the advantage of college training, ascribes his industrial success to having been able to pick out for his lieutenants young men of unusual talents and enterprise. He founded the Carnegie Institution for the purpose of doing in science what he had done in the steel business; that is, to discover the exceptional man wherever he might be and set him at the work for which he was peculiarly fitted. But the Carnegie Institution, under the exclusive control of college men, has practically abandoned the search for diamonds in the rough and mute inglorious Darwins buried in country colleges, and is devoting its revenues chiefly to the support of a few permanent establishments for systematic research. I do not say that this is not a more profitable way of promoting science than the endowment of individual genius, but it is a very different thing. The patron we have always with us, but the form of the patronage changes. Formerly the duke or king gave his stipend to a certain person whom he knew and thought would make him a good poet, playwright, painter, engineer, alchemist, or astrologer. In spite of the capriciousness and tyranny of the patron and the sycophancy of the

retainer, the system did produce some great names. Nowadays we put faith in institutions rather than in individuals, and our modern Medici subsidize sciences instead of men of science.

The scores of different degrees granted by our universities have mostly lost their significance, those that ever had any, but fortunately the most important of them, the doctorate of philosophy, has a fairly well-defined meaning in any particular field. Between different departments of the same university, however, there is apt to be wide variation in its requirements. In the sciences, for example, it stands for creative ability, for the power to produce whatever one has been studying about. It must be admitted that not all the doctors in science give any convincing evidence of such ability after they get away from their Alma Mater, but while there they are supposed to have done some original work. In the literary departments there is not even a pretense of any such standard. The candidate for Ph.D. in literature is not expected to produce a book, only to learn about it or about something more or less remotely connected with it, such as the printer or the printer's blunders, or the author, or the author's house, or his wife or his manservant or his maidservant or his ox or his ass or anything that is the author's. He is not required to discover something hitherto unknown, but merely to dig up something that had been forgotten. He is not even expected to discover a new author. He simply explains why some celebrated author was worth discovering and how he came to be discovered in spite of the opposition of the academic circles of his day. If one of these candidates would apply his talents and training to the exploration of an unknown field, say the reading of the thousand volumes of new poetry published in 1909 in order to pick out all the verses that show originality and genius, he would do us all a service and demonstrate the possession

of a certain degree of critical insight and esthetic taste. This would correspond in science to work in taxonomy, such as going over the herbarium specimens of a particular genus or family in search of a new species, a humble but creditable branch of botanical research which, if successful, might be deemed worthy of being rewarded with a Ph.D. The origination and propagation of a new species by cross-fertilization would, however, be regarded as more completely satisfying the requirements of the degree. At any rate, the doctor in botany knows a flower when he sees it. But I am acquainted with some doctors in literature who not only could not write a good poem, but do not know what poetry is, have no idea what poetry is for, and would not be able to detect it in an unlabeled package.

It is not probable that any reputable department of chemistry would grant its doctorate to a man who presented a dissertation on "The Family, Friends, and Formative Influences of Amadeo Avogadro, Conte di Quadregna," however long and arduous a research this might have involved. No, the chemist has to imitate Avogadro to the best of his ability, not study about him. He must discover a new law, work out a puzzling reaction, or make a lot of new compounds; not find them, but invent them. It is the same in applied science and the fine arts. For an advanced degree in engineering a man must, for instance, be able to construct a bridge, one that will not fall down a-building. The school of architecture will not certify to the competency of a student until he can design a Carnegie library or a triumphal arch. The doctor in music must compose an original symphony or something of the kind.

It seems to me that it would be only fair to require of every candidate for Ph.D. in English literature the writing of a successful novel, a volume of good essays, a poem of distinct merit, an acceptable play, or some contribution to belles-lettres that will meet with the approval of the ju-

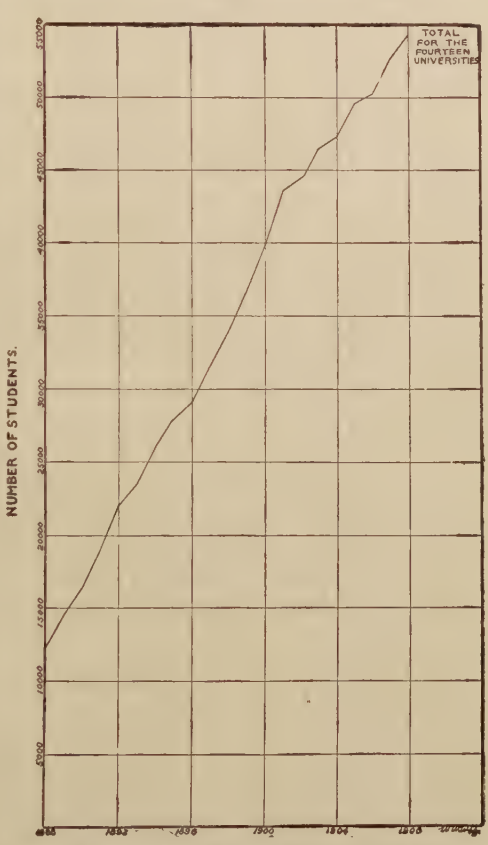
dicious if not of the public. Even the requirement that the candidate should have a ghost story accepted by *The Black Cat* or a feature page by a Sunday newspaper, would serve to weed out a considerable portion of that teeming department. That is, if literature is a science, it should require original contributions to knowledge like the other sciences. If it is an art, it should require craftsmanship like the other arts. If it partakes of the character of both, it should meet both requirements instead of dodging both by keeping in between. I do not mean to say that the dissertations now presented in literature are necessarily valueless, though it seems to me they often belong more properly to other departments, such as history, sociology, or pure philology. The subject on which a friend of mine worked for some years in one of these universities, "The Use of Sense Adjectives in the Minor Poets of the South," belongs, I should say, in psychology, if anywhere.

Now, this lowering of the standard would not matter so much in any other department. If, for example, the departments of astronomy should cease to require original research, in the sense that this is understood in the other sciences, it would not have much effect upon the university as a whole. The intrinsic difficulty of the subject would prevent its being sought by the leisure class, and even if professors of astronomy should in the future not have the zeal for discovery now so characteristic of them, it would not seriously impair the faculty and student body. But all the students go through the English department, and there they are apt to come under the influence of men who have other ideals than most of their colleagues, who are not doing, and are often not capable of doing, original work; who are not making literature of the day as other men in the faculty are making the philosophy, the politics, the art, and the science of the day. They are critical rather than creative. Their ideal is impeccability rather than originality.

This, I think, is partly accountable for the decline of the literary society and the literary magazine in colleges. It is remarkable that at a time when new magazines by the hundred are appearing, and books in every department of literature are sold in unprecedented editions, the literary activity of college students seems to be lessened. I doubt if there is a literary magazine in any of our universities which could be called prosperous or popular, as was the case a generation ago. In some of the universities, in spite of their increase in size and wealth, the literary monthly has ceased to exist or appears only fitfully, always in distress for want of contributions. Looking over the files, as I have in many cases, I do not find that there has been any noticeable improvement in the literary quality of the contributions to these magazines in the last twenty years, notwithstanding the greater attention now paid to training in English. Good work of its kind is being done by the students on their dailies and humorous periodicals. Apart from this the only form of literary activity that seems to have attraction for the college student of to-day is playwriting. If the great American drama does not appear within the next decade, it will not be for lack of ambition and earnest effort. Usually there are one or two of the English professors who interest themselves in the student dramatics and journalism, but for the most part they are spontaneous and independent. So, too, the musical department rarely has anything to do with the training of the glee clubs, or the art department with the photography and sketching of the class annuals.

The degree of doctor of philosophy is further imperiled by its popularity. Its financial value is too great. College and even high school authorities are disposed to ignore the application of any candidate not having this appendage. They insist that all their teachers shall be doctors, oblivious of the fact that all doctors are not teachers. We have got far away from the original meaning of the title. If those

trustees and presidents who regard a Ph.D. as indispensable would take the trouble to go through the catalogues of Harvard, Columbia, and Yale, they would be surprised to find how many names there are, some of the highest renown, which are not followed by these magic letters; in a few cases not even by a modest A.B. or B.S. But so long as Ph.D. is regarded as a necessary teaching degree it will be sought with persistency by those who have no other qualifications for it. And persistency here, as elsewhere, is apt to attain its object. After a while the professors get tired of seeing a man hanging around the seminar or laboratory and will give him a degree to get rid of him.



TOTAL NUMBER OF STUDENTS IN THE FOURTEEN UNIVERSITIES, 1888–1908.

The most effective check on the tendency to lower the degree is the printing of the dissertations. This ought to be done in all cases and promptly. If delayed, as it often is, for months or years, some other graduate is likely to put down a prospect hole on the same lead and lose his labor through the prior claim. If not deemed worth printing,

it may be questioned whether it is worth accepting. By printing it other people will have a chance to form an opinion as to whether it was worth accepting. The requirement of having it in type before the degree is conferred would work little hardship were it not for the insistence upon the bodily presence of the candidate, for no other apparent purpose than to grace the triumphal procession of the president on Commencement Day. Otherwise the candidate could complete his research, take his final examination, and go home or to his new field of labor, assured that his diploma would follow by registered mail whenever his dissertation was published. Under such circumstances its publication would not be unduly delayed or indefinitely postponed, as it often is at present.

But the doctors we are turning out now are not so likely to be deficient in the knowledge of their specialties as they are in that general culture and broadmindedness that are properly regarded as belonging to "a gentleman and a scholar." The making of a doctor is looked upon too much as a departmental, even as a personal, affair. If the major professor is satisfied with him, nobody else feels inclined to interpose very emphatically. This would be all right if the doctor bore the name of the professor as part of his title, but he does not. He stands as the representative of his Alma Mater in his community, and if he is not a man in whom the university can take pride, it is because the university as a whole has refused to assume the responsibility for him.

To correct this, I suggest that a preliminary examination be given after the candidate has been working a year or so in the graduate school, about the time when he begins to settle down on his specific research. Some of the universities are now requiring an examination at this point if for nothing more than to ascertain if he has a reading knowledge of French and German, but I have in mind something more

thorough and extensive, a long and informal conference attended by representatives of all the principal departments, to test the candidate's personal fitness for the honor, his range of ideas, and his command over them. If the professor of political economy and the professor of philosophy find that the candidate for Ph.D. in botany cannot converse intelligently with them on their own ground, they should exercise their veto power. If, on the other hand, they find that they cannot converse intelligently with him on botanical subjects, they should resign and go into the insurance business. Nowadays, when the civil service examiners expect mail carriers to know the distance from the earth to the sun, and policemen the capital of Sweden, it is not too much to require of doctors — and of professors — a corresponding extent of information. The university authorities may believe that they are certifying only to a man's knowledge of "The Intracellular Enzymes of Penicillium Camemberti," but the outside world interprets the degree differently, and in five years the specialist in moldy cheese may be arbitrating a strike or, quite unconsciously, teaching pragmatism. We have to allow for the fact that the American system of interchangeable parts is held to apply also to our social and educational machinery.

If such a preliminary examination were held, the final one could be confined to two or three related departments, as now. I have attended the oral examinations of doctors whenever I happened to be in a university during the season, and it was interesting to see the variety of ways of conducting them, even in the same institution. Some are very ceremonious; some quite the reverse. The board of examiners varies in number from three to twenty-five. Sometimes the candidate's research work is the main subject of inquiry; sometimes it is not mentioned. In some departments outside specialists are called in to assist in the examination; in others all persons except the committee are excluded.

Prospective candidates may be encouraged or may be forbidden to attend. Personally I am in favor of a greater publicity. If professors and advanced students from the same and especially from other departments would attend freely, it would be of great educational value to them and would not materially increase the embarrassment of the candidate. I suggest also that it might be advisable to make it a rule to invite the attendance of a representative of the same department of some other university to take part in the oral examination and vote on the candidate's qualifications. This, even more than the publication of the dissertation, would tend to keep up the standard. Of course, there is the danger in greater publicity, that the examination would become a mere ceremony, as the disputation became in Germany, and the candidate would merely be put through his paces by his trainer to the admiration of his friends and the wonder of the public.

Because of the exaggerated importance given to degrees and grades and credits in our educational system the question of the equivalence of courses is a constant cause of dissatisfaction and wrangling in all universities. Where the elective system prevails the easy studies are picked out not merely by students who are lazy but often by students who are working hard in other departments or for self-support, as well as by students who are ambitious and want to get high marks. Where the courses are prescribed the difference in the amount of work required to get degrees that are the same or ostensibly equal is glaringly apparent. In coeducational colleges the grades of the feminine half average higher than the masculine, but it is always a question how much of this difference is due to greater diligence or ability of the women and how much to the fact that they are in part taking different and often easier courses.

Students generally estimate that a course in physical science or technology requires about three times as much

work as a course in literature or sociology. This, however, is not due so much to their being "intrinsically much more difficult" as it is to the different standard of grading employed. This factor, not often taken into consideration, is, in my opinion, the most important in the problem. There is a broad distinction between the humanistic and technical faculties in the way they look upon their students. The humanist by profession looks backward; accordingly he marks on the basis of achievement. The technologist by profession looks forward; accordingly he marks on the basis of proficiency. One tries to estimate the performance, the other the promise of the student. The instructor in a technical school always has in the back of his mind the thought that if he passes this doubtful student in mathematics, he is likely to be called upon sometime to certify to his ability to build a bridge and will not be able to refuse, whatever his private misgivings. Consequently he gives himself the benefit of the doubt and flunks him. The humanist has no such fear of the future. He fears rather the loss of a student in the present. Consequently he gives him the benefit of the doubt and passes him. If the professor of English literature had to certify that all his graduates could unerringly tell a bad book from a good one and point out its fault, as the professor of toxicology has to certify that his graduates can detect the minutest trace of poison in a food, he would be more stringent in his grading. These two methods of appraising the student, both legitimate, should find expression in different sets of symbols for grades and degrees. It would be a relief to the conscience of an instructor if he could send in to the registrar some cabalistic mark which, properly expanded, would read: —

"I am compelled to admit that M (or N) has calculated the strain sheets of a bridge (or translated two books of the Iliad), but upon my soul I don't believe he (or she) could ever do the like again."

It is unfortunate that the newer forms of the studies relating to the intellectual development of mankind, such as the history of art, literature, philosophy, sociology, and the like, which from their natural interest and great importance are specially adapted to form the core of a modernized humanistic education, make such slight demands upon the students' activities. A core needs to be stiff and tough. Of course any study can be made artificially laborious and time-consuming to any desired degree by loading it with extraneous drudgery, but it ought not to be necessary to resort to this common pedagogical trick. Sometimes the students see through it. It remains to be seen whether the social and political sciences, as they become systematized, will develop some mode of training corresponding to laboratory work in the sciences, handicraft in the fine arts, and translation in the languages. As now taught in our universities generally they require little more of the students than the ability to sit still in a chair for three quarters of an hour several times a week. This really is no trouble unless one has something else to do, for the lectures are often made exceedingly attractive by epigrams and illustrations. It is hard to suggest any way in which they could be improved in this respect; not impossible, however, for a story is told of a professor of sociology who had discarded the antiquated lantern-slide system and introduced a moving picture apparatus, which showed slum life and settlement work with great vividness. At the close of the lecture he asked a favorite student loitering by his desk what he thought of the innovation. The student commended it with the moderation of manner and falling inflection characteristic of Seniors, but added: "Say, Professor, couldn't you run in some illustrated songs to relieve the monotony?"

It is to be hoped that more of our universities will adopt moving pictures, for it is doubtless a legitimate and useful mode of conveying information. But so long as the lectures

in these studies remain largely information and the attitude of the students chiefly passive receptivity, the students will be sneered at by the men in engineering and medicine — and a certain fraction of them will deserve it.

In the preceding pages I have told some of the things that I found out in my tour of the universities. It may be of interest to refer to some of the things that I failed to find out. Two queries in particular that I had on my list on starting out proved to be absurdly impossible. I wanted to find out what the college students of to-day were reading and thinking about; that is, what were their unofficial favorites among authors, and what sort of philosophy they were working out for their own guidance through life. I was disappointed in the quest because I had overlooked the fact that the years which had passed since my graduation, few and short as they seemed to me, had put me outside the barrier which conceals the workings of the adolescent mind.

The query as to the undergraduate taste in reading was suggested by a stray aphorism which I happened upon, that "what the college student is reading to-day all the world will be reading in ten years." As a preliminary test of its validity I applied it to my own experience, and it seemed to have some truth in it. Harking back to my school days, I recollected that the authors we were reading in our rooms at night were Browning, Ibsen, Kipling, Whitman, and Omar Khayyám. We were not agreed in our admirations, but each of us was crazy about one or more of these authors and zealously proselyted among such of his friends as he esteemed worthy of being initiated into the cult. By the end of a decade, however, it was, even in Kansas, no longer a distinction, but rather the mark of a bourgeois mind, to express a fervent admiration for Browning, Ibsen, and the rest. The lights we had followed from afar had become fixed stars, by which all the world was oriented.

Now, I thought, I will get an advance tip on the coming craze by ascertaining what new authors, unappreciated by me, have been sighted by the keener eyes of youth. But I was disappointed. The class-book questionaires on literary preferences give no help, for in them "Three Weeks" and "The Vicar of Wakefield" are likely to be tied for first place. The librarians and professors of English whom I consulted generally asserted that the college boys read nothing but the required books and talked nothing but athletics. The news-stand men told me that the *Saturday Evening Post* and the *Ladies' Home Journal* were most popular of periodicals. In the week at my disposal I could not get into the confidence of the students enough to form any reliable conclusion as to the prevailing literary taste. Still, I managed to get access to one or more coteries of genuine book lovers in each institution, and from them made out the following list of favorite authors: Kipling (but they can't have him; he belongs to us by right of discovery), Stevenson, O. Henry, H. G. Wells, Jack London, Shaw, Chesterton, Churchill, George Ade, Richard Harding Davis, W. J. Locke, F. Hopkinson Smith, and Frank Norris. From this one would judge that the college students of to-day keep to the list of best sellers and do not go nosing for truffles, as we used to. They may have their esoteric literary cults and take a priggish delight in them as formerly, but I was not able to discover them. The only marked deviation from the popular taste of the day is the extravagant — no, I will not call it extravagant, for I agree with it — but the unusual admiration expressed for the author of "The Octopus." Wherever I got a group of students to talking books, some one was likely to burst out with "If Frank Norris had only lived!" which was the signal for a chorus of eulogy. But in how far the names given above represent the reading of the average college student, if he does any reading, I am unable to say.

My other query, as to what the students were thinking, was started by Chesterton's remark: —

"There are some people — and I am one of them — who think that the most practical and important thing about a man is still his view of the universe. We think that for a landlady considering a lodger, it is important to know his income, but still more important to know his philosophy. We think that for a general about to fight an enemy, it is important to know the enemy's numbers, but still more important to know the enemy's philosophy."

In my time and environment (to be specific, 1887–1890, University of Kansas) theological speculation, pure and simple, had lost the zest it had for a previous generation, but the controversy over evolution had not quite died down, and the rise of sociology and experimental psychology was starting new questions in religion, ethics, and politics. Spencer, Mill, Huxley, Hartmann, and Bellamy were our heroes or antipathies, to be fought over with that wholehearted enthusiasm which is characteristic of college students — or used to be. Has hero worship gone out of fashion? If not, what are the magic names that the boys of to-day grow red-faced and choked up over? To what gods not in the official pantheon do they burn incense in secret? Which of the world's riddles do they scrap about in their rooms and on the steps? Has the spirit of partisanship been dissolved in a tepid ocean of universal toleration? What new messiah do they discern, or what false prophet is leading them astray? I could not find out. I mentioned the name of Nietzsche. No reaction; at which I breathed a sigh of relief. I tried pragmatism, mysticism, spiritualism, anarchism, new thought, Haeckel, Eucken, Maeterlinck, anything, anybody, that I suspected might catch the fancy of the rising generation, but I could not strike a live wire. Eugenics? They had not heard of it. I inquired about socialism. A bored look came into their faces. "We had that last term," they replied. Perhaps here lies the expla-

nation of their indifference. The instructors nowadays may be so quick to seize upon every new thing that the students cannot get ahead of them, and when a subject goes into the curriculum, it ceases to have an emotional interest. All the questions the students might ask are answered authoritatively in advance. All their wants are prevised. "The wonders of science" is a meaningless term to this generation. Biology is no more of a revelation to them than bookkeeping. Research is a business like any other, and the philosophic and humanistic aspects of their science do not interest them. So it seems to me, but I have no right to express an opinion, for I realize that I did not succeed in finding out what the college student of to-day is reading and thinking. A smooth-faced detective entering Freshman and working up might get at it.

Among my omissions are two conspicuous tendencies in American university life to which I have merely referred in the preceding articles; that is, the growth of ritualism and of athleticism.

The first I have not discussed at length as I should have liked to because I felt that the ritualistic movement might be trivial and certainly is irresistible. All the churches, even those which were established as a protest against liturgy, have succumbed to it. Fashionable society is extending its imperious rites over a larger circle. The universities merely obeyed the dictates of the *Zeitgeist* in taking it up. It is a spontaneous and popular impulse. Often it is the students themselves who force the caps and gowns upon a reluctant faculty. It was earliest and strongest felt in the exclusively masculine colleges of the East, so it cannot be ascribed to the feminization of university life. There is no serious opposition to it anywhere. Some of the scientific and technological men in some places do not like it, but they conform, not deeming it worth making a fuss about. I am, therefore, forced to conclude that my repugnance is mere

personal prejudice, due to three centuries of inbred Puritanism. Whenever I attend commencement exercises, I take care to select a seat that is screwed down, lest, as the academic procession appears, I should be seized with that divine frenzy which inspired good old Jenny Geddes in St. Giles' Church to throw the stool that purged Scotland of prelacy forever.

"Some praise the fair Queen Mary, and some the good Queen Bess,
And some the wise Aspasia, beloved of Pericles;
But o'er all the world's brave women, there's one that bears the rule,
The valiant Jenny Geddes, that flung the three-legged stool.
With a row-dow — at them now!
Jenny, fling the stool!"

But this was written years ago, and Professor Blaikie, who wrote it, is dead long since, and I rarely find a man who shares my feeling in this matter. There is no consolation to be derived from the saying, "One with God is a majority," for when one finds himself quite alone, he begins to be afraid that God himself has gone over to the majority. So it is with self-distrust and pure despair that I dismiss the subject after recording my personal opinion that a dozen mortar boards on the campus are more of a menace to democracy than a million-dollar endowment from a trust magnate. For no man can tell what use is going to be made of his money after he has let it slip out of his own hand, but a widespread spirit of exclusiveness and arrogance, such as find expression in ceremonies and costumes, cannot be eradicated.

On the other point, opposition to intercollegiate athletics, I am happy to be able to use the word "we," instead of "I." We are in a minority, but it is not a hopeless minority. University presidents, with few exceptions, express approval of intercollegiate contests, alumni give them enthusiastic support, students vent their displeasure upon any who presume to question their value, and the outside world encour-

ages and applauds, but in every university there is a considerable, and I believe, an increasing number of the instructing staff who are profoundly dissatisfied with the athletic conditions of to-day, though they are not always free to express their opinions on the subject. I was appealed to more often than on any other matter to expose the practices of neighboring institutions, their illicit players, their brutality and foul play, their venality and extravagance. But when I went on to the next university, I learned that the one I had just left was really the worst in the country in these respects. This was confusing, so I had to throw away my copious notes and confine myself to a few general conclusions. These are, that athletic contests do not promote friendly feelings and mutual respect between the colleges, but quite the contrary; that they attract an undesirable set of students; that they lower the standards of honor and honesty; that they promote dissipation, gambling, and extravagance; that they corrupt faculties and officials; that they cultivate the mob mind; that they divert the attention of the students from their proper work and pervert the aims of education.

The amount of physical exercise obtained at an intercollegiate contest is inconsiderable. A little pushing with the elbows in entering and leaving the ground, some exertion of the lungs in yelling, and a test of endurance in the transverse compression of the larger muscles of the lower limbs — that is all the exercise gained by the thousands of persons who assist — in the French sense of the word — at one of these contests; hardly enough physical benefit to compensate for the cases of pneumonia contracted through exposure to inclement weather. That twenty-two young men on the gridiron are over-exercising does not compensate for the fact that five or ten thousand are under-exercising on the grand stand. What happens to the men on the team does not matter so much, because they are comparatively few. I object to football on Puritanic grounds, not because

it gives pain to the players, but because it gives pleasure to the spectators. There is only one new rule needed to reform football and only one that will do it; that is, the abolition of the grand stand. Let the students play football as much as they like and stop when they get tired, according to any rules or none. If there is nobody watching them, they will not injure themselves much and others not at all. The evil of a prize fight lies not in the fight, but in the prize.

The real value of an athletic contest may be represented by a fraction whose numerator is the number of players and whose denominator is the number of watchers, present or absent. As the latter number increases the game degenerates into a sport, the sport into a spectacle, and the spectacle into a gambling device. For every man who takes part in an athletic contest personally there are a hundred who take part by proxy, and a thousand *in absentia*. To the multitude watching the game from a distance the numbers appearing on the bulletin board, the ticker, or in the papers might as well be produced by a roulette wheel. This, in fact, may be expected as the next step in the evolution of the game. As the fox hunters have dispensed with the fox, and the produce exchange with produce, and the policy shops with the lottery wheel, so the football of the future may be conducted without players. This will save some thirty lives a year and a great deal of misspent energy, and would afford just as good an opportunity for the display of college loyalty through the staking of desires or currency.

An athletic contest between two colleges indicates nothing whatever as to their relative standing in physical culture. If Harvard beats Yale in rowing, it does not prove that the average physique of the Harvard students is superior to that of the Yale students. If there could be devised a contest to show this, say a tug of war with every student hold of the rope, or, better, a comparison of gymnasium

records showing the strength, symmetry, endurance, and health of the entire student body, then the spirit of emulation might be productive of improvement in their physical condition. As it is now, those who need exercise least get the most of it.

The most vulnerable point in our collegiate system is the diversion of the interests of the student body from the true aims of the college. Social life, athletics, dissipation, and the multitude of other student activities have cut down to the minimum the attention given to their studies. President Wilson, of Princeton, in his recent Concord speech explained the situation with characteristic frankness and lucidity: —

"So far as the colleges go, the sideshows have swallowed up the circus, and we in the main tent do not know what is going on. And I do not know that I want to continue under those conditions as a ringmaster. There are more honest occupations than teaching if you cannot teach.

"I believe in athletics. I believe in all those things which relax energy, that the faculties may be at their best when the energies are not relaxed, but only so far do I believe in these diversions. When the lad leaves school, he should cease to be an athlete. The modern world is an exacting one, and the things it exacts are mostly intellectual."

Now, students have never given as much attention to their books as their instructors think they should, and there is no reason for expecting that they ever will. But it is possible to have such an atmosphere in a university that the students will have scholarly interests, will prize scholarly honors, and will cultivate scholarly diversions. Such an atmosphere has been maintained in many places and for long periods, and it is not unreasonable to hope that it may be reëstablished in our American universities. The new president of Harvard, in his Phi Beta Kappa address at Columbia, has called attention to the fact that in Eng-

land the competitive honors of the universities have a value even in the outside world:—

"We need more than a minimum requirement to get men of ability; there must be an external stimulus. And yet the college today is the place where that stimulus is applied least. By the free use of competition athletics has beaten scholarship out of sight in the estimation of the community at large and in the regard of the college student bodies. Should faculties not take advantage of a similar stimulus? In the English universities the now established system of honor and pass examinations has the result of bringing before the public the acquisition of such distinctions so that they are referred to nearly as much as are athletic feats in this country.

"Competition as a means of power suffers from the students' idea that we are employing tests of industry alone and not those of intellectual superiority. We should employ tests that will measure not merely diligence but those which will measure the amount of intellectual power. On the new standard of shunning individualism the scholar seems to be striving for a personal distinction, but the member of the football team stands out worthy of praise as a college hero because of his devotion to the interests of his Alma Mater, or rather to those of his fellow-students. It is a sort of coöperative selfishness."

President Lowell's remarks are of special weight, for it is natural and probably not unjust to assume that they are in some degree indicative of his intended policy at Harvard. It is, therefore, interesting to see that he does not seem averse to the introduction of the competitive motive into the field of scholarship, from which it was not many years ago expelled with contumely. The professors, it appears, are to take lessons from the coaches.

Some such extraneous incentive certainly seems to be necessary, for the pure delight of intellectual achievement does not compare as an inducement to exertion with the greater glory of banners and bands and newspaper headlines. Phi Beta Kappa is not a noticeable stimulus and Sigma Xi, its equivalent on the scientific side, has even less prestige.

If we are to have intercollegiate contests in intellectualism, what form will they take? Will there be public disputations, in the style of the schoolmen? Will the two sides alternately propound to each other mathematical puzzles and logical subtleties? Will the Association of American Universities prescribe the rules and the Carnegie Foundation and General Education Board offer the prizes? And will the public take the same interest in the contest that they now take in baseball?

Let us suppose that the new *régime* of intellectual competition is in effect now, and Columbia and Cornell are matching their dissertations. In New York City, Park Row is packed with upturned faces watching the bulletin boards. Clerks and their employers hurrying home have stopped to get the returns. Bootblacks and messenger boys, sitting in a row on the fences, have staked their last nickels. The stockbroker nudges the man with a dinner pail and asks him for the score. On the blackboard in front of the newspaper office appears the announcement that Dr. Kropff, of Columbia, has prepared some new derivatives of diaminoisophthalic acid. Cornell counters with Dr. Ray's triazo-compounds of resorcin. Then Columbia scores with Dr. Tripp's dissertation on "Groups of order $p^3 q^2$," followed by Dr. Mead's on "The chondrocranium of an embryo pig, *sus scrofa*." That part of the crowd which has its money on Cornell looks gloomy, but recovers when the markers chalk down Dr. Ventura's "Catalan Phonetics" and Dr. Carney's "Pleistocene Geology of the Moravian Quadrangle." A shout from a thousand throats is heard when the street sees that Dr. Haas of Columbia has translated the Dasarupa of Dhanamjaya, until the applause is checked by the announcement of Dr. McKelvey's study of the groups of birational transformations of algebraic curves of Genus 5. His curves seem to baffle Columbia for a moment, but Dr. Parmelee, formerly of Yale, comes to the rescue with his dissertation

on "Inebriety in Boston." So the contest goes on hour by hour, while the popular excitement grows more intense, and extras of the yellow journals, with portraits of the winning men and explanatory diagrams of their theses, spread the news to the suburbs. The real heroes of the university thus receive the honor that is their due, and the athletic student must get his gratification from the mere joy of exercise.

I have in several instances called attention to what seems to be a significant movement of our times, the tendency of the rival factions of college faculties to come together and forget their traditional rivalry. There is arising a new spirit of mutual toleration and comprehension and a disposition on both sides to moderate their exclusive and exaggerated claims and to join forces for the promotion of modern education.

The old warfare between science and classics is practically over. The old weapons are still flourished occasionally but merely from habit. The former pugnacious zeal and dogmatism are lacking. This is not so much because the classicists have been defeated as it is because the scientists have been triumphant. There is widely prevalent in technological as well as in literary departments, a feeling of disappointment at the results of a generation of scientific training, a feeling that science has had its chance now and has not "made good." Spencer's tract on "Education," and Huxley's simile of life as a chess game played against Nature, are as unanswerable as ever, but they are not so convincing as formerly. The men now coming out of our laboratories and shops do not, to say the least, stand head and shoulders above their mates in the humanistic departments. They are not so distinguished by their broad-mindedness, tolerance, practicality, truthfulness, logical power, and freedom from superstition and like infirmities, as to demonstrate the intrinsic superiority of scientific training.

Whether or not it has been proved that the advantages to be gained by the study of science are the same as, or equal to, those derived from the study of the classics, it has been undeniably demonstrated that the evils resulting from poor teaching of the sciences are the same and quite as great as those produced by poor teaching of the classics. That is, the subject-matter of science does not in itself have any magic power to make it practical, to prevent the student from falling a victim to an instructor's dullness or laziness. All the ancient evils which the advocates of the new learning so vigorously criticized in the old are to be found too often in classes devoted to the most novel and utilitarian of subjects, that is the aloofness from life, the memorizing instead of thinking, and the cheating of the pupil into the belief that he is gaining valuable information when he is only learning new words.

Of course, it is not fair to expect reformers to keep their promises. They never can "deliver the goods." It is doubtful if any reform would be zealously enough propagated to carry it through or strenuously enough opposed to prevent it if advocates and opponents were not deluded into the belief that it would make more of a change in human affairs than it ever does. It may also be argued that science has not had a fair chance because its teachers have not had the real scientific spirit. That is true, but beside the question. Everybody will agree that zoölogy, as taught by an Agassiz or Huxley, is an inspiring and profitable study, but the question is whether zoölogy as taught by the ordinary high school teacher is better than Latin as taught by a man of the same caliber.

The humanists must not interpret the dissatisfaction with the results of scientific training as indicating that they are to be reinstated in their ancient rights and privileges. A restoration of the Bourbons, if they have forgotten nothing and learned nothing, would be followed by another

revolution. But they may find in it an opportunity to coöperate with their disillusionized colleagues of the opposite wing of the faculty in founding a new education which shall have the advantages of both.

The humanists were eternally right in maintaining that the proper study of mankind is man. They lost ground when they departed from this principle and acted upon the idea that the proper study of mankind is words. The scientists won their cause by showing that a study is not necessarily devoid of educational value because it has a practical bearing on modern life. We are disappointed in them when they desert their winning colors and act upon the assumption that the ultimate ideal of humanity is a mathematical formula. If the two parties could be kept to their respective ideals, there would be little conflict between them, and a few mutual concessions would bring them together. The classicists should concede that the human race extends beyond the Mediterranean basin and that there are other avenues of approach to it than half a dozen books in Greek and Latin. The astronomer should be required to teach that man is the center of the universe and that the sun, stars, and comets really revolve around our earth, however convenient it may be for him to adopt temporarily an extra-terrene standpoint for the purpose of calculating their orbits. The zoölogist may devote his life to the anatomy of the South Sea sea-urchin, but he should be able to tell why he is doing it. The editor of a scientific series should do what the editor of a daily often does, hand back the manuscripts to their authors marked "H. I." with a blue pencil, this meaning to a reporter "run human interest into your story."

The present age is sharply distinguished from all that have preceded it in the history of the human race by the amazing increase in wealth. In every civilized country the value of property per capita is far greater than ever

before, notwithstanding the unprecedented increase in population during the last century and the higher standards of living among all classes. Luxuries longed for or undreamed of by our parents are our common household conveniences. Our tenements are better than medieval palaces. Financial magnates employ corps of experts in the art of high living for the purpose of inventing new ways of spending more money. In a single year we import $125,000,000 worth of extravagances from Europe, diamonds, laces, feathers, champagne, and the like. The bitter attack now being made from all sides against our unequal and inequitable method of distribution is due to the fact that there is more wealth to distribute than ever before. The bigger the spoil, the more strenuous the struggle. Bricklayers now get more than professors used to, and still they are not satisfied, and there is no reason why they should be, so long as they can get still more.

This sudden increase in the wealth of the world can be traced to one cause. There is a new factor in civilization. This new wealth is the gift of modern applied science. All the other wealth-producing factors have remained substantially unaltered. The natural resources of the earth are no greater; in fact, they are less, for our soil is less fertile and our ore lies deeper. It is not the discovery of America, adding two continents of new land, that has brought about this increased prosperity, for the most densely populated countries in Europe are increasing in wealth almost as rapidly as we are. The old world has always had waste land enough; already Americans are emigrating to Africa and Siberia. It is not because men of ability are any more common than they used to be. There has been no sudden eruption of genius on this planet. There has been no perceptible improvement in the human race since the time of Aristotle, either in the intelligence of the average man or in the number or eminence of the exceptional men.

Our enhanced wealth is not the product of manual labor. Men have always worked hard enough; never harder probably than when the fellahin built the pyramids of Egypt. There have always been capitalists, too, not so numerous nor so rich as at the present time, but enough to carry out large industrial enterprises whose ruins astonish us yet. Wars are not so frequent as they used to be, but they are more destructive, and Europe never spent so much in the most belligerent crises of past centuries as it now spends continuously in this time of peace on armies and navies.

No, what we have that our ancestors had not is more knowledge of the laws of nature and more willingness to apply them. There are some who complain that science is becoming commercialized. That may be, but a commercialized science makes greater progress than a philosophized science ever did; greater progress even in its most abstract branches. The shop is pushing the study. The mathematician works as he always has for the pure joy of seeing what the human mind can do with lines and numbers and quantities, but now the engineer waits impatiently beside his desk, like the office boy on the editor, to snatch his formulas from him before the ink is dry to construct a new dynamo with them. The chemist, working with the electric furnace out of pure curiosity and the desire to read a paper before the academy, makes some new carbides; within a few years the waterfalls of Europe and America are turning them out by the ton, and our automobiles are lighted by acetylene and polished with carborundum. A new element is discovered, good for nothing apparently except to fill a gap in Mendeléef's table, but it speedily appears in our gas burners and cuts down our bills.

It is this middleman between the scientist and the mechanic who is the new force which is accelerating the wheels of progress. It is the engineer, the technician; his profession is so recent that it has no proper name, but it

has already made good its claim to an equal place beside the three historic learned professions. It requires no less scholarly preparation; in fact, it is cheaper to educate a lawyer or a minister, if not a doctor, than a technologist, and the last has greater assurance of immediate paying employment and better prospects for rising to a position of affluence. Some of our great industrial establishments have a standing offer of a job for all graduates of certain schools of technology. They tempt Seniors to desert their class work and even fish for likely Juniors, "rushing" them and getting them pledged in advance as college students work for their fraternities and athletic teams. The technical school which Mr. Carnegie has established at a cost of $20,000,000 will do no more than supply the needs of the Pittsburg district. There is a chance for a dozen like it in the United States even at the present time. As for the future, it would be rash to prophesy, for applied science is yet in its infancy and we cannot tell what it will accomplish when it is full grown.

It is a new exponent that raises the efficiency of the individual to a higher power, but we do not know its limiting value. One man now makes twice as many tons of iron as he did ten years ago. In some manufactories where twenty or fifty men formerly were condemned to hard labor for life, now there are two or three, and they have little to do but watch dials and press buttons. We are told that the capitalist is destroying the middle class. It is still more significant of modern tendencies that the technician is eliminating the working class. In most industries the number of workmen is diminishing in its ratio to the amount of the product. The future will have little use for the physical strength of man. Labor-saving and wealth-producing inventions will in time give employer and employee something worth quarreling over.

This practical, commercial, and scientific civilization of

ours is not something to be opposed *in toto* by the universities. Neither should they stand aloof from it. They should enter into it and transform it, cultivate it, idealize it. They should lead in the development of a new idealism in conformity with the spirit of our times. In this task the coöperation of representatives of all departments of learning is needed. Humanist and scientist should work together. I have referred to the resentment of the State universities at being so constantly sneered at as "materialistic" and "utilitarian." Sometimes they try to avoid the imputation by disguising themselves in the old clothes of scholasticism. But more and more they are realizing that they must work out their own salvation, find their own way into the higher life. What they are aiming at, more or less unconsciously, has been called, by Professor John R. Commons of the University of Wisconsin, "utilitarian idealism," and I want to quote part of his definition because it expresses in more eloquent language than I could use what I have tried to interpret as the spirit of the new education: —

"Esthetic idealism is the ideal of a perfect product. This is above all things the object of our utilitarianism. I do not see why there is not as much idealism in breeding a perfect animal or a Wisconsin No. 7 ear of corn, or in devising an absolutely exact instrument for measuring a thousand cubic feet of gas, or for measuring exactly the amount of butter or casein in milk, as there is in chipping out a Venus de Milo or erecting a Parthenon. In fact, our agricultural education starts off at the beginning of the Freshman year by requiring the student to picture in his mind the ideally perfect horse, or cow or ear of corn, and then to cultivate his observation and judgment by showing exactly where and how far some actual cow or corn falls short of the ideal. This is the 'score-card' method of instruction, which I think might well be adopted by idealists. Of course a cow is just a cow, and can never become a Winged Victory, but within her limits she is capable of approaching an ideal. And, more than that, she is an ideal that every farmer and farmer's boy — the despised slaves and helots of Greece — can aspire to. But,

most of all, this idealism of a perfect product is the only way of rendering a perfect service to others. The same is true of all other branches of applied science. They are all teachers of esthetics to the common man. And it is only as a science gets applied that its idealism gets democratized. Utilitarianism is the democracy of idealism.

"I am not so much discouraged by Wisconsin's 'materialism.' Wisconsin is not an accident — it is as inevitable as democracy. It makes a science and an art out of what to the Greeks was degrading toil. It has not finished its work — it is really only experimenting. It has not as yet given a conclusive answer to the idealists. It has only challenged them to help out. The methods of applied science, now inaugurated in agriculture and engineering, need to be extended to merchandizing, sociology, law, history, and literature, where the idealists prevail. By taking pay for their work they have themselves become grossly materialistic from the Greek standpoint. For this reason they are better adapted to help in the grand mission of adding imagination to the kind of work by which others must earn their living. This is utilitarian idealism."[1]

In my fourteen weeks' course in American universities I had the unusual experience of attending more than a hundred class exercises in different subjects conducted by as many different instructors. It was an interesting experience, and valuable. If I had had it before, I would not have spoiled so many roomsful of students in learning how to teach — and how not to. Coming back to the classroom after having left it for five years, and so viewing it from the standpoint of an outsider while retaining a sympathetic comprehension of the difficulties of a teacher, I was struck by the waste of time and energy in the ordinary collegiate instruction. The scholarship of the profession in all its grades is doubtless higher than it ever was. There is no lack of industry, devotion, and enthusiasm on the part of the teachers, but the educational results are not commensurate with the opportunities afforded and the efforts expended. There is too much "lost motion" somewhere in

[1] *Intercollegiate Magazine*, December, 1909.

the process. It would be well if the teachers did not know quite so much, if they knew how to tell what they did know better. It is a principle of hydraulics that the flow of water depends on the character of the outlet and the head, and not at all on the amount of water in the tank. In many cases it has seemed to me that the instructor has come into the room without the slightest idea of how he is to present his subject. He rambles on in a more or less interesting and instructive manner, but without any apparent regard to the effect on his audience or the economy of their attention. The methods of instruction are much the same as those used in the universities of the thirteenth century. There is no general appreciation of the fact that the printing press has been invented since then, also the camera and kinetoscope, the typewriter, and the mimeograph; and that for this eye-minded generation there are many more effective methods of conveying an idea than the spoken word. "The power of the spoken word," about which we hear so much nowadays, depends unfortunately upon who speaks it. Born orators are few in our faculties and trained orators are fewer. Many lecturers do not even take pains to speak distinctly enough so they can be heard in their small classrooms without strained attention. Many introduce matter which cannot be conveyed through the ear. I have heard long columns of figures read off to a class, tables of boiling points, population, and the like; also descriptions of complicated apparatus and machinery, details of analytical processes, dimensions of ancient buildings, lists of names and dates, references to readings, sometimes read in such a hurried and indistinct manner that they could not be taken down, sometimes slowly and laboriously written out on the blackboard. Such data, wherever necessary, should be given to the students in printed or typewritten syllabi, and the university authorities should see that such facilities are freely provided for their instructors and util-

ized by them. The lecture is useful for inspiration and demonstration, but not for information. Facts and figures that the lecturer cannot keep in his own head for fifty minutes are not likely to get into the heads of the students.

The scientific professor has an advantage over his colleagues in being able to use experimental illustrations, but he does not always make the most of his advantage. This is due to the general adoption of the self-denying ordinance, "Use the simplest experiment that will illustrate the point." If simplicity means lack of complexity, this is a good rule, but if it is interpreted as "the most modest and inconspicuous experiment that will illustrate the point," it is false pedagogy. We have gone too far in the avoidance of grandstand plays, forgetting that college students are human beings, and as such are impressed by bigness and noise. I believe that the spectacular experiment can be used with advantage in our large lecture rooms, even though it seems like a return to the much contemned "Wonders of Science" epoch. Pouring a jar of carbon dioxide down on a dozen candles undeniably makes more of an impression than pouring it on one candle, and the game is worth the candles. A professor of chemistry was once commiserating the professor of mathematics on the fewness of his students, and the latter, resenting the implication that popularity was a proof of good teaching, replied: "The trouble with mathematics is that nothing ever happens. If, when an equation is solved, it would blow up or give off a bad odor, I would get as many students as you."

I have heard of a professor of English in one of our universities who evidently felt that his department was under the same disadvantage as mathematics. Finding that his scientific colleagues were getting appropriations of astonishing liberality for illustrative apparatus, he put in his annual report a request for $5000 for an aviary. When the president asked him to explain, he said that it was im-

possible for him to teach poetry properly unless he had an aviary connected with his classroom. "Then," he said, "when the class is reading Shelley's 'Skylark,' I reach my long-handled net into the cage, catch a lark, and hold it up to them. And when we are studying 'The Rime of the Ancient Mariner,' my assistant will be stationed in the gallery with a crossbow to shoot a real, live albatross on the platform, thus giving the students opportunities for observation that doubtless Coleridge himself never had."

The literary faculty has borrowed and misapplied so many of the methods of scientific research and instruction that it is impossible to say that we may not come to this yet. At any rate, the project shows a commendable enterprise and appreciation of the desirability of stimulating the interest of the students by bringing them into closer contact with reality.

If the lectures could be made more inspiring and stimulating, they could be made fewer and shorter. A flash of lightning makes a more lasting impression than a 16-c.p. incandescent running all night. But the students have not sufficient resistance to stand shocks of lightning for eighteen hours a week, nor could the instructor keep up the necessary voltage. The really eloquent and inspiring speakers in the universities, are not numerous enough to go around, and they are often poor drillmasters and inefficient administrative officers. Their gift could be utilized to the best advantage by having them address large classes once or twice a week and in several different institutions during the year. Then the ordinary and stationary instructors could devote themselves to working with the students at close quarters. That is, should not there be recognized in university work the distinction of function which, in some form or other, has always been made in the ecclesiastical work, the distinction between prophet and priest, revivalist and pastor?

As it is, the professors give too many lectures and the students listen to too many. Or pretend to; really they do not listen, however attentive and orderly they may be. The bell rings and a troop of tired-looking boys, followed perhaps by a larger number of meek-eyed girls, file into the classroom, sit down, remove the expressions from their faces, open their notebooks on the broad chair arms, and receive. It is about as inspiring an audience as a roomful of phonographs holding up their brass trumpets. They reproduce the lecture in recitations like the phonograph, mechanically and faithfully, but with the tempo and timbre so changed that the speaker would like to disown his remarks if he could. The instructor tries to provoke them into a semblance of life by extravagant and absurd statements, by insults, by dazzling paradoxes, by extraneous jokes. No use; they just take it down. If he says that "William the Norman conquered England in 1066," or "William the German conquered England in 1920," it is all the same to them. They take it down. The secret is that they have, without knowing anything about physiological psychology, devised an automatic cut-off which goes into operation as they open their notebooks and short-circuits the train of thought from the ear directly to the hand, without its having to pass through the pineal gland or wherever the soul may be at the time residing and holding court.

One of the unfortunate results of the lecture system is that the professors get so used to talking that they cannot stop. Faculty, departmental, and council meetings are apt to be unduly extended, and in the end the wisdom of the whole body is not equal to the sum of its parts. On account of their ineffectiveness as a branch of administrative machinery, the tendency is to curtail their power and throw more responsibility upon the president, who is, like the Speaker of the House of Representatives, forced to

become an autocrat. So far as my experience and observation go, the deliberative bodies of universities, small and large, have substantially the same method of procedure, and I suggest that if the following rules were framed and hung on the wall of the faculty room, it would save time now wasted in discussing the proper order: —

ORDER OF BUSINESS AT FACULTY MEETINGS

1. Present motion.
2. Pass it.
3. Discuss it.
4. Reconsider it.
5. Amend it.
6. Amend the amendment.
7. Discuss it.
8. Move to lay on the table.
9. Discuss it.
10. Refer to a committee with power to act.
11. Discuss it.
12. Adjourn.
13. Discuss it.

I have preferred to deal with the wider movements and tendencies of the universities, both good and bad, in connection with the particular institutions in which they happened to be conspicuous, rather than reserve them for the end. This has, I am aware, placed an exaggerated emphasis on certain features in each case and given to my criticisms an unfair incidence. But when the novelist describes the nose of one of his characters, the teeth of another, and the hair of a third, he expects the reader's imagination will credit these personages with the other customary features of normal size and function. I ask a similar indulgence. When I do not have occasion to mention, say, the department of French, the Y. M. C. A., or the gymnasium in any case, it is to be assumed that they are present and doing their proper

work. If the reader wishes a complete and authoritative description of a university, with each department given its due space, he should read the catalogue instead of this book.

After all, these universities are very much alike; more alike, doubtless, than they claim to be; more alike, probably, than they should be. For a wider field could be covered if the different universities were more specialized and diversified in their professional and graduate schools. The American university tends to a specific type, very different from that of England, Germany, or France. This type has now been authoritatively defined for us by the National Association of State Universities at its thirteenth annual meeting.[1] The "standard American university" must require for entrance to its college department a high school course of four years or its equivalent; it must give in its college of arts and sciences two years of general or liberal work, followed by two years of more specialized work of university character; it must have adequate facilities in at least five departments for three years of graduate work leading to the Ph.D. degree; it must have at least one professional school, such as law, medicine, or engineering, requiring for entrance two years of college work. It will be seen that this is an ideal rather than an average. A strict construction of the detailed specifications would come near ruling out some of these fourteen great American universities, particularly on account of the collegiate requirement for the professional schools.

Such differences as exist in the character of these universities arise more from their history and environment than from any difference in their aims. Thus Harvard and Yale are in common parlance coupled together and set in a class by themselves, chiefly because they have, for more

[1] For full details of the requirements see the Report of the U. S. Commissioner of Education, 1909, p. 89.

than two centuries, been the chief contributors to the intellectual life of the nation. Notwithstanding their present inequality in numbers, they are alike in many respects, such as the eminence of their faculties, the high quality of their graduate work, and the size and importance of their colleges of liberal arts. A marked distinction between them has now been made by the action of Harvard in placing all its professional schools above the college, while at Yale they are still in part rivals of the college. The Johns Hopkins University, while rivaling Yale and Harvard in research work, is in the most decided contrast to them in that it is a young institution and that its undergraduate department is relatively insignificant. It has only one professional school, the medical, but that is of the highest rank. Princeton and Stanford may be conveniently classed together, notwithstanding their difference in age and the distance between them. Both are comparatively small institutions, chiefly undergraduate, admirable in architecture, and being situated in the country, they have distinctive forms of student life. But Stanford is as predominantly scientific as Princeton is classical. Princeton, like Yale, is now much concerned over the question of how to develop the graduate and professional training demanded by modern conditions without destroying the unity of the college, which has been its chief pride. The State universities of Michigan and Illinois are also located in small places; the former, the oldest, and the largest of the State institutions, possessing very popular law and medical schools; the latter now rapidly developing on university lines, with its strength mainly in engineering and agriculture. The State University of Wisconsin has been distinguished by its successful efforts to be of service to the Government and the people of the State, and the University of Minnesota, in a similar environment and in close proximity to the capital, seems likely to develop in the same way. Cali-

fornia and Cornell, though about as far apart as they could be geographically, have some points in common. Both have strong agricultural and engineering departments and both attract many students from Asia and South America. Columbia, Pennsylvania, and Chicago universities, being located in large cities, have similar fields, but while Chicago recently came into being full grown, the others have developed slowly through a long process of accretion, and their life is intricately involved with that of the city. All three pay special attention to the needs of teachers, Columbia and Chicago by means of independent professional schools of high grade. Columbia is at present advancing most rapidly and is likely soon to outstrip all the other universities, both in the number of students taking regular work and of other persons receiving instruction in special studies.

In devoting so much attention as I have to the novel and spectacular work of these universities I have not done justice to the faithful service done in the more ordinary and more essential departments. Notwithstanding that the average professor receives relatively less remuneration and less honor from the community than in past generations, there never were more competent and earnest men engaged in university work. And when we consider how many of them have turned aside from opportunities to make money because they preferred teaching and research, it is hard for them to be sneered at for incompetency because some of the men they have trained are getting bigger salaries than they. Our universities are "under fire" just now from many quarters, but more often because they are in advance of the age than behind it. They are more efficient in their methods and more ready to meet and even anticipate the needs of the community than ever before. On the whole they fully justify the liberal support they are receiving in all parts of this country.

It was necessary for me to limit my study to a few universities, and I have chosen the more prominent ones because they have the most points of interest and present some novel problems. But it should be understood that there are scores of other institutions in the United States that do just as good work in collegiate education and often in advanced and specialized studies as those here mentioned. In conclusion I can find no words that more exactly express my opinion than those used by James Bryce in his "American Commonwealth": —

"If I may venture to state the impression which the American Universities have made upon me, I will say that while of all the institutions of the country they are those of which the American speaks most modestly, and indeed, deprecatingly, they are those which seem to be at this moment making the swiftest progress, and to have the brightest promise for the future. They are supplying exactly those things which European cities have hitherto found lacking to America; and they are contributing to her political as well as to her contemplative life elements of inestimable worth."

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